

MANKIND

OFFICIAL JOURNAL OF THE ANTHROPOLOGICAL SOCIETIES
OF AUSTRALIA

Vol. 4, No. 6.

MAY, 1951

Price : 3s. 6d.

CONTENTS

PLATE O. ABORIGINAL KITCHEN MIDDENS AND MARINE SHELL BEDS.

ORIGINAL ARTICLES :

DESIGNS INCISED ON PEARL SHELL. DR. CARL SCHUSTER	219
AN ASSESSMENT OF CERTAIN BUSHMAN AFFINITIES. MR. A. J. H. GOODWIN	221
"CARGO CULTS" AND POLITICAL EVOLUTION IN MELANESIA. M. JEAN GUIART	227
ABORIGINAL RELIGION IN ARNHEM LAND. MR. R. M. BERNDT	230
AUSTRALIAN ABORIGINAL COOKING METHODS. MR. W. E. HARNEY	242
A PHALLIC STONE FROM CENTRAL AUSTRALIA. MR. H. R. HALFOUR	246
ABORIGINAL KITCHEN MIDDENS AND MARINE SHELL BEDS. MR. E. D. GILL	249

OBITUARY :

Mr. George W. Watkins. F. D. MCCARTHY	254
---------------------------------------	-----

PROCEEDINGS OF SOCIETIES :

Annual Report of the Anthropological Society of N.S.W., 1950	255
--	-----

REVIEW :

The Children of Hari. STEPHEN FUCHS. (F. L. S. Bell)	256
--	-----

CORRESPONDENCE :

Aboriginal Net Making. N. B. TINDALE	257
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Published by
THE ANTHROPOLOGICAL SOCIETY OF NEW SOUTH WALES.
C/o. Australian Museum, College St., Sydney.

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MANKIND

OFFICIAL JOURNAL OF THE ANTHROPOLOGICAL SOCIETIES OF AUSTRALIA

Vol. IV, No. 6.

MAY, 1951

ORIGINAL ARTICLES :

Australia : Material Culture.

Schuster

Designs Incised on Pearl Shell from North-Western Australia and Tanimber. By Carl Schuster, Ph.D.

Among pearl-shell ornaments with "key or meander" patterns, said to be characteristic of the Karadjeri tribe around La Grange on the Kimberley coast of North-western Australia,¹ is a specimen illustrated by Mountford and Harvey,² here reproduced as Fig. 1. We venture to see a similarity between the scratched design of this pendant and the design incised on a spoon of nautilus shell from the island of Tanimber in eastern Indonesia, Fig. 2.³ The darkening of design areas by means of cross-hatching and other forms of *hachure* is characteristic of the Tanimber spoons, as it is of the particular type of Australian pearl-shell ornament here in question. The designs of the Tanimber spoons generally include pairs of human figures arranged in various attitudes. In the example here illustrated, two legless bodies, evidently conceived as facing in opposite directions, are joined by a sinuous common torso. The question may be asked whether the complicated "meander" incised on the Kimberley pendant, Fig. 1, might not be the debased version of a Tanimber design of the type of Fig. 2 ; i.e., whether it might not be derived from a pair of human torsos arranged to form a conventional pattern somewhat like those of the picture suites in our card games, in which the figures always face in the same direction, no matter which way the card is turned.

By way of support for the possibility of relationship between these two designs, we cite the following statement about native trade between Indonesia and Australia: "The Malays from

¹ Elkin, as quoted by F. D. McCarthy, "'Trade' in Aboriginal Australia, and 'Trade' Relationships with Torres Strait, New Guinea and Malaya," *Oceania*, Vol. IX, 1939, p. 97.

² C. P. Mountford and Alison Harvey, "A Survey of Australian Aboriginal Pearl and Baler Shell Ornaments," *Records of the South Australian Museum*, Vol. VI, 1938, p. 122, fig. 4, D (from Bernice Bay).

³ After the original in Amsterdam, Indisch Instituut, ethnographical section, A. 2226 a.

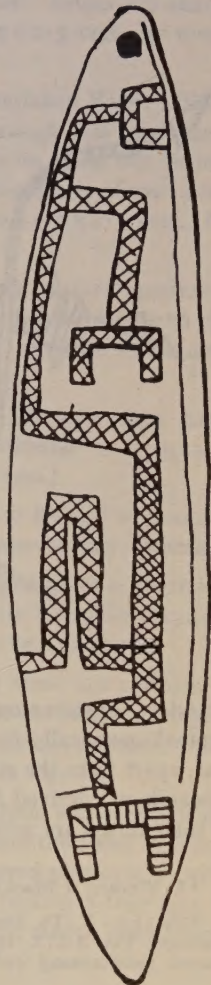


Fig. 1.

Makassar (Celebes), Koepang (Timor) and Timor-laut [i.e., Tanimber], from an early date, made yearly voyages down through the East Indian Islands and through the Arafura Sea to the northern coast of Australia . . . They made these long trips to Australia because they wanted to acquire the native pearl-shell, pearls, tortoise-shell, trepang and sandalwood, found all along the shores of north Australia."⁴ Though we do not propose that *all* "key or

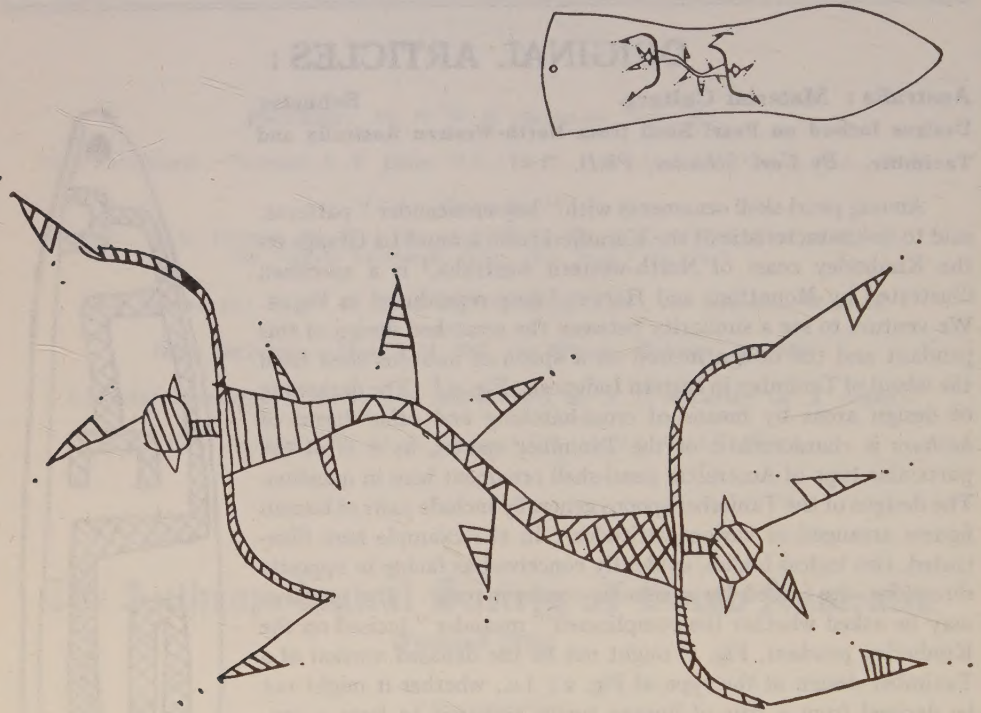


Fig. 2.

meander " patterns on the Kimberley pendants are necessarily derived from human figures inspired specifically by models from this one Indonesian island, it should be kept in mind that, apart from the striking similarity of material and technique in this particular instance, "meanders" derived from series of human figures facing in opposite directions and joined by their torsos are widely characteristic of Papuo-Melanesian art.⁵

⁴ L. Warner, *A Black Civilization*, 1937 (appendix), as cited by McCarthy, *op. cit.*, p. 191.

⁵ See, e.g., K. Th. Preuss, "Künstlerische Darstellungen aus Kaiser-Wilhelmsland," *Zeitschrift für Ethnologie*, Vol. XXIX, 1898, p. 80, figs. 1-10, etc. (The present writer plans to develop this theme in a separate publication.)

C. SCHUSTER.

Africa : Ethnology.**Goodwin**

An Assessment of Certain Bushman Affinities.¹ By A. J. H. Goodwin, M.A., F.R.S.S.Afr.,
Senior Lecturer in Ethnology and Archaeology, University of Capetown, South Africa.

In 1923 the University of Capetown Ethnological Museum received seven implements from Mr. G. G. Holmes of Tasmania. They are numbered 23/117 to 23/123, and the last five in the series were found by J.V.C. Possibly these provide the only comparative material we have in this country. While it would be redundant to illustrate these in the present paper, I think a brief description for purposes of identification is essential.

23/117. Coal River, east of Lake Tiberias. Indurated shale. Cortex forms most of outer face of flake. The butt is plain (not faceted). The bulb of percussion is marked and the angle of cleavage is obtuse. The shale is unpatinated but dulled. Edges are sharp. This has been fashioned into a circular scraper measuring $7.5 \times 6.5 \times 2.5$ cms. by even, steep trimming.

23/118. Blackman's River, one mile west of Oatlands, on the Interlaken Road. Black indurated shale, patinated to a dull fawn; the black shale shows through this skin where damaged. The edges are fairly sharp still. Butt probably intended to be plain, but formed by two cleavages which supplied the striking platform. The cleavage angle is obtuse, even wide. This has been formed into a circular scraper measuring $8.0 \times 5.0 \times 2.5$ cms., by rather flat pressure-flaking showing marked ability.

23/119. Brighton. A grey-green indurated shale or perhaps a surface quartzite, patinated to give a marked though thin skin. The striking platform is hardly visible on the flake, but consisted of brown cortex. This has been fashioned into an endscraper ($5.0 \times 4.3 \times 0.9$ cms.).

23/120. Bellerive. Old rose surface quartzite. The striking platform may have been roughly prepared or may be an irregular cleavage. The material is fresh and unpatinated. It has been made into an endscraper ($5.4 \times 3.0 \times 1.0$ cms.).

23/121. Prince of Wales Bay. A similar endscraper ($5.2 \times 3.3 \times 0.8$ cms.) of greenish shale or surface quartzite, patinated. Plain striking platform. Little secondary trimming.

23/122 and 23/123. From Devonport and Stanley are untrimmed flakes of a quartzitic sandstone and a light grey chalcedonic rock respectively. One may have a crudely prepared striking platform, the other is from a pebble, and may well have been broken in use.

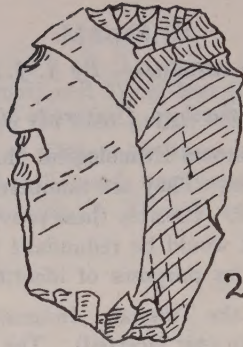
Without accurate knowledge of the climate, conditions, sites and stone age cultures of Tasmania, we can deduce little from this meagre collection. It is quite obviously not representative even of a single site, therefore no negative deductions can possibly be made, while inference must be guarded as I cannot tell how typical the implements may be.

We can infer that the Tasmanian made use of a plain-striking platform and of secondary trimming techniques which would be classed in Europe as Upper Palæolithic, and in South Africa as Later Stone Age. He may have employed a crudely prepared platform as well, but we cannot be sure of this. His choice of materials (presumably lacking a true flint or an obsidian) was identical with those of Later Stone Age Man in South Africa, and I have presumed to use the same wide terms for these materials that we employ here.

¹ This paper was read before Section F of the biennial meeting of A.N.Z.A.A.S. held at Hobart in January, 1949.



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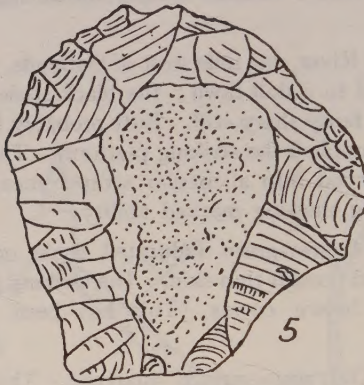
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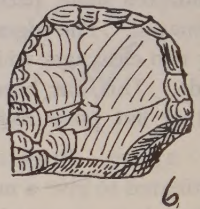
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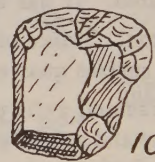
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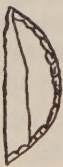
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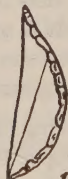
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Figs. 1-6. Smithfield B tools, mainly from Griqualand West and the Karoo.

Figs. 7-10. Smithfield C tools, from similar areas.

Figs. 11-15. Wilton tools from the Cape Peninsula (single and double crescents and a small endscraper).

Whether it is the result of South Africa and Tasmania being the end points of a single vast curve of distribution, whether it is the product of the use of similar materials, or whether man's tools throughout the world show a fundamental similarity, the fact remains that each of the five tools described briefly above can be duplicated a thousand times in South Africa. In a land so rich in man's prehistoric remains this is not extraordinary. What is remarkable is that the closest similarity, the most exact duplication, the nearest affinities all lie within a single South African cultural group. More curious still, the same range of patination (implying though not proving age) is represented, though here the extreme conditions imposed in the summer rainfall area make patination more intense.

The South African parallels lie within the Smithfield Culture of the Later Stone Age,² a culture I named some twenty-five years ago from the work of Dr. Kannemeyer of Smithfield in the eastern Orange Free State. The culture is somewhat more complex than was at first thought. We have at least three phases. The first is called Smithfield A, an early development that has the two-inch (5 cm.) circular scraper as a typical tool. This was followed by a more prolific phase B that covers the Free State and the upper Vall and upper Orange River Basins with tens upon tens of thousands of implements. Most typical is a two-inch duckbill endscraper, but the circular scraper still persists, often reduced in size. This phase prevailed in large areas until last century. The Smithfield C we shall discuss a little later.

The affinities of the Smithfield B suggest that it grew out of the Lower Capsian culture, a culture that at one time extended from Spain to Kenya on the equator in East Africa. With the drying up of the Sahara in and following the Buhl Stadium, the cultural area was split, so that those peoples to the south spread into Africa, while those to the north were replaced by the expanding Neolithic peoples from the Fertile Crescent, eventually deteriorating into the midden peoples of Portugal.

Whatever their fortunes may have been further to the north, once they reached the basins of the upper Orange and Vaal they encountered two important rocks. The one was igneous dolerite, the other was shale, indurated into a black porcelain by contact with volcanic action. The distribution of these two materials is very clear and is usually indicated by a limiting line on geological maps. Their cultural value was enormous. Smithfield B man settled here for long ages and quickly perfected his tool-making techniques in indurated shale, so that the same tools occur side by side with patination varying from grey to a mere dulling of the slight lustre of newly-flaked shale, indicating long periods of sojourn without development, but marked rather by consolidation of culture into a more clear-cut local pattern.

The dolerite seems to have been too coarse-grained for the making of small tools, but the preceding men of our Middle Stone Age seem to have picked or engraved simple pictures of animals by cutting through the thick outer skin of patina to varying depths. Smithfield man took up the idea, and continued the simple art until it ends with crude pictures of men with guns on horseback and even nine-men's-morris boards of European origin.

I was able to show at Vosburg³ (between Britstown and Victoria West) how this "locality tradition" was capable of surviving various cultural phases, kept alive by the sheer desire

² A. J. H. Goodwin and C. van R. Lowe, "Stone Age Cultures of South Africa," *Ann. S. Af. Mus.*, XXVII, 1929, pp. 151-234, illust.

³ A. J. H. Goodwin, "Vosburg: Its Petroglyphs," *Annals S. Af. Mus.*, XXIV, 4, 1936, illust.

to imitate older drawings on the rocks, and without direct cultural contact, so that from the Middle Stone Age it extended even into the European period of colonization.

The Smithfield culture was one of the two stone age industries associable with the folk we call the Bushmen to-day. This is not the only culture linked with them, and we shall see that the picture is more complex than might at first appear. The other associable culture is the Wilton.

The Wilton culture⁴ seems to have originated in the Upper Capsian of North Africa, and is thus related in source to the Smithfield. It has since travelled down the length of Africa, probably impelled by the final phases of the drying up of the Sahara. Sites occur in Kenya, in the Rhodesias and in South Africa. Here and there we find variation, but there is a recognizable unity from the Equator southwards. This is essentially a true microlithic culture using small tools that would presumably be mounted for use. The lunate or so-called crescent was the most common, but here and there in the south we find a development that includes the so-called double crescent—or to use the terminology of modern jewellery, the marquise-cut stone. It is boat-shaped, measuring perhaps 2.0 cms. in length and 1.0 cm. wide.

We find a queer lithological factor affecting the position. The indurated shale which appealed so strongly to the Smithfield folk seems to have been too brittle for small tools, so that the Wilton microliths are made almost exclusively from semi-precious stones such as agates, chalcedonies, etc. The larger part of the indurated shale areas show no Wilton tools at all, or an isolated specimen may appear now and then, suggesting an isolated tool lost in the dry and unattractive shale areas.

These Wilton folk were essentially the painters of South Africa. Although there are the expected fashions and modes in our paintings, there is no clear evidence that cave-painting preceded the Wilton period in our shelters; the tradition seems to have come down Africa with the Wilton folk and to have ended with the little people who represented this culture a century or so ago, and who are to-day called the Bushmen.

Though the Wilton tools could seemingly not transgress into the shale areas, the Smithfield folk entered the Wilton preserves and adopted the materials used by the inhabitants. This shows that the two groups were probably not antagonistic but recognized their ancient identity of origin. The fusion gave rise to a partly regional phase, the Smithfield C. Both crescents and geometrical tools fail to appear, but the tool-types that were typical of phase B are now made in miniature, generally just half the original size, while painting becomes the channel of artistic expression, at times reflecting the art and choice of subjects more typical of the pecked and engraved dolerites.

Further cultural and racial waves followed mixing with or impinging on these two widespread cultures. The cattle-keeping Hottentots are the eventual products of such a movement, physically and linguistically akin to the Bushmen, though not identical with them in either, and having a more advanced mode of subsistence. Perhaps the first pottery was introduced by the Hottentots (though crude fragments occur sporadically in association with the Smithfield B) but we are not yet certain of their implements. It is possible that they brought in polished tools that in Europe would be termed Neolithic, as a few such

⁴ *Loc. cit.*, pp. 251-276, illust.

examples are known. In many instances they seem to have had a Wilton culture or tools derived from this, probably a result of fusion.

The Hottentot was followed by the iron-using Bantu-speaking Negro, and finally the European entered from the south. These migrations have all confined the Bushman more and more to the dry lands of the Kalahari, not his natural habitat, but forced upon him by the pressure of higher cultures. Here he is faced by hard conditions rendered even harder by the presence of game-laws.

There is obviously no evidence to link the peoples of Tasmania with any culture here save the Smithfield B if we judge from the handful of tools at our disposal. Perhaps there are microliths in Tasmania that have only been recognized in the past twenty years, or polished axes that connect with those of our Neolithic elements here. My knowledge of Tasmanian tools is regrettably slight, too slight to suggest any affinities beyond the superficial similarities cited above.

On the physical side the contrast between the Bushmen and the Tasmanian is probably great. I shall shortly enumerate the most striking and typical characteristics of our Bushmen, summarized from the observation of over a hundred skulls, and not merely from individual chance attributions. I shall not attempt any comparison or contrast with the Tasmanian (we have a single authentic skull in the University collection), for I know from frequent experience how sadly erroneous such comparisons may be in the absence of statistically comparable numbers of well authenticated specimens.

Physically the Bushman is a race unto himself. The type is readily recognizable and has been variously described as San or Khoisan. It occurs, as one would expect, in various combinations known to anthropologists as Bush-Boskopoid, Bush-Hottentot, Bush-Bantu, etc., terms that have ousted the once popular medley of races known as Strand-lopers. Boskop represents an early type of man, possibly an element present among the original Hamitic migrations that eventually gave us the Hottentot.

The fundamental criteria in the Bushman skull may be expressed as follows. Looking down on the skull from above, the cranium is of medium length and is markedly pentagonoid, the two parietal bones showing a marked bulge in the region of the foetal centres of growth. The two cheekbones are frequently visible from above as the frontal bone is narrow. There is a complete absence of any ridges above the eyes, and the forehead rises vertically, then turns sharply back at the hairline to give a flat crown to the head. The face is short, wide and vertical, coming down to a small palate. The jaw is similarly small, giving a typical triangular look to the lower face with its high cheekbones. The ramus of the jaw is remarkably short. The nose is wide and flat.

The stature is short, averaging less than 150 cm. (five feet), and therefore the small brain capacity of 1300 ccs. accords with the stature, and is not less than we would expect in a small European.

The small face, vertical forehead and normal cranial capacity all make the skull infantile. Curiously enough, man's whole evolutionary story is linked with this tendency for each succeeding species to fix the characteristics of the infant as the pattern for the new adult. If this rule is absolute, the Bushman is not primitive but represents a Peter Pan race, a race that never grew up. He is thus curiously advanced, perhaps the most highly evolved of the human species. If this is so, his evolution seems to have carried him into a "pocket," so

that, like the Tyrannosaurs of old, he has over-specialized in the evolutionary sense, while we more ordinary men have retained the malleability and adaptability of the less specialized forms.

The living Bushman has a khaki skin, and he frequently shows the Mongolian fold at the inner corner of the eye. The ear is lobeless, and his hair is of the extreme woolly type, so much so that the hairs seem to cluster into isolated "peppercorns," leaving apparently bare skin between. The hair never grows long. There is a tendency to a fatty development of the buttocks in the women, that has frequently excited the interest of scientists. The skin wrinkles at an early age, so that a Bushman of forty looks like a man of sixty, and any Bushman of sixty is described by the local press as "well over a hundred."

The present tendency to mix with neighbouring tribes of different race is probably the result of cultural inferiority, so that concubinage and serfdom are imposed by more advanced peoples.

A study of skeletal remains shows that the death-rate in the old days before the European came was very high, and the infant mortality rate was appalling. There is little reason to believe that the extreme age of the Bushman ever exceeds the century and there is every reason to suspect that the expectation of life, even for a grown youth, is very low. We have no figures, but long years of excavation and contacts with skeletal remains convince me that this is so.

So far as affinities are concerned, the double burial at Grimaldi on the Franco-Italian border is often quoted as showing some relationship with our Bushmen. In 1931 I went to great trouble to see the original skulls and can affirm that the old woman shows no similarities whatsoever, while the youth shows only such similarities as may be attributed to the skull conformation of youth. There is thus no reason to suspect any physical relationship. The Central African Pygmy is often coupled with the Bushman. His heavy face, protruding jaws, receding forehead, ungainly form and proportions are all in marked contrast to the characteristics and fine miniature proportions of the Bushman. The skin colours are different, and all that is held in common is the woolly hair. Even the way of life shows a contrast. The forest Pygmy is essentially a vegetarian, turning to small forest game for meat food. The Kalahari Bushman is a meat-eater, a hunter of big-game, turning to the relatively sparse vegetable foods for a part of his fare only—a part left mainly to women and children. Here a gorge of ostrich egg or a feast of the soapy tsama melon (*citrullus* sp.), or an occasional wild bees' nest provides the relaxation from a diet of antelope, zebra, and other game.

The Australoid peoples show no affinities at all with our Bushmen, though one remarkable Australoid skull has been described from Philippi, seven miles from Capetown.⁵ So identical is this specimen to the Australian Blackfellow that one might almost allocate him to a particular Australian tribe. But this is no Bushman. Less clear Australoid characteristics have been found by Broom among a race he calls the Korana, after a tribe of Hottentots on the Lower Orange River. Presumably such Australoid types belong to an early (probably Middle Stone Age and therefore developed Mousterian) dispersal about the Indian Ocean, south of the Himalayas. It is to be expected that they would show themselves sporadically as pure strains, but would leave only diluted traces in a few surviving and therefore distant descendants.

⁵ M. R. Drennan, *J. Roy. Anthropol. Inst.*, LIX, 1929.

Believing that a study of form is more important than the most laborious comparison of anthropometric measurements and realizing that comparison needs large numbers of authenticated specimens, I refrain from contrasting or comparing the Bushman and the Tasmanian. Current literature shows the Tasmanian as obviously related to both Negroid and Australoid stocks, and we can take it that this implies characteristics contrasting strongly with those of the Bushman as enumerated above.

CONCLUSIONS

1. Within South Africa the Bushman can be linked with both the Smithfield complex and the Wilton culture, which showed themselves capable of uniting in certain areas to provide the Smithfield C phase, partly regional and largely divorced from the use of indurated shale, but linked with the tradition of Cave Painting started by the Wilton folk.

2. The Bushman is a racial group with no apparent affinities elsewhere, and there is no evidence to link his physical type with those of Australia or of Tasmania.

3. Similarities discernible between Smithfield B implements and certain Tasmanian specimens might be due either to the general affinities that exist between all recent stone age tools, or to similarities evoked by likeness of material and way of life, or to an early diffusion of culture about the Indian Ocean south of the Himalayas.

4. Australoid types in South Africa suggest an even earlier spread, evident only through diluted traces that survive to-day.

A. J. H. GOODWIN.

Melanesia : Social Anthropology.

Guiart

"Cargo Cults" and Political Evolution in Melanesia. By J. Guiart, *Ethnologist, Institut Français d'Océanie, New Caledonia.*

Having recently read a very interesting article by Mr. Cyril Belshaw entitled "The Significance of Modern Cults in Melanesian Development,"¹ I feel constrained to offer some criticism of the author's conclusions, at least so far as they concern the two areas with which I became acquainted in 1947, i.e. New Caledonia and the New Hebrides.

Mr. Belshaw's contention is that Cargo Cults have thrived in "half way" native communities, that is, in groups already well advanced in the acculturation process but not yet really familiar with the white man's culture. As I know them, the facts do not entirely support this opinion. Moreover, as an explanation, it is not sufficient.

THE NAKED CULT, ESPIRITU SANTO

There are four instances of this movement, comprising the murder of Mr. Craig and his wife in 1908, the murder of Mr. Clapcott in 1923, the Runovoro School affair of 1937, and the Naked or "Malamala" cult of 1947.

I have no special details of what happened in 1908. The next three occurrences show closely identical characteristics. The same bush and heathen people were implied. A ship

¹ *The Australian Outlook*, Vol. IV, No. 2, Sydney, 1950, pp. 116-125.

was to bring all kind of goods for the natives. She was to land close to Tasimalum, south-west Santo, where Clapcott was killed. More recently a Mr. Wood is said to have been asked to quit Cape Lisburn, as he was not to be allowed near the ship's landing place.

The missionary J. G. Miller published a paper² in 1948, giving some other features which he believes are recent, and including (a) villages to be destroyed and replaced by communal houses, (b) corpses to be exposed on a wooden platform in the bush instead of being buried beneath the floor of the deceased person's house.

This last order is not new. Administrative reports of 1937 already mention such changes in the ways of disposal of the dead. The origin of communal houses may be earlier still. Tom Harrison³ published a map in which two shaded areas indicate the occurrence of "communal houses." The southernmost area corresponds exactly with what Mr. Miller says of the actual extension of the Naked Cult.

Other features have still to be confirmed; at least, as to their being new. The only certain evidence points to the replacement of the "white ancestors" by Americans in the prophecy of the ship's coming; and, no less important, to a better organization of the movement by a drastic divorce of believers from non-believers.

THE JOHN FRUM MOVEMENT, NEW HEBRIDES

This movement has gone one step further in beginning to organize non-co-operation with European rulers, particularly the Missions.⁴ In spite of a strong administrative repression, John Frum kept its ground and even proselytized in northern and central New Hebrides (Malekula, Ambrym, Paapa, Epi). In all these islands, the bushmen were practically left untouched. Except in Tanna, where other Christians followed suit, the adherents of the cult came almost entirely from among the Presbyterian following, and were at times obeyed by all their fellows. In all of these cases the blame can be laid on the Presbyterian missionary methods as a result of which the native social organization has been entirely disrupted, new Christian villages having been established under Christian chiefs, and undue influence brought to bear on the administration.

LIFU, LOYALTY ISLANDS

In 1945, after the war, a communist movement was launched among the natives of New Caledonia. It spread very quickly but subsided as soon as the patent dishonesty of the main European promoters was unmasked. In Lifu, the local propaganda took a specific "Cargo Cult" appearance: a ship was to be sent from France by the metropolitan Communist Party to bring the native communists all the necessary means to gain equality with the whites, and docks were built to receive the cargo.⁵ I am of the opinion that the natives are

² J. G. Miller, "Naked Cult in Central West Santo," *J.P.S.*, Vol. LVII, No. 4, 1948, pp. 330-341.

³ See Tom Harrison, *Savage Civilisation*, London, 1937, pp. 271, 370 and 381. His description is confirmed by official reports as late as 1937.

⁴ Patrick O'Reilly, "Prophetisme aux Nouvelles-Hébrides. Le Mouvement John Frum à Tanna," *Le Monde non Chrétien*, n.s. 10, 1949; and Jean Guiart, "Le mouvement John Frum à Tanna (Nouvelles-Hébrides)," to be published.

⁵ I am originally indebted for this indication to my friend M. Lenormand, Secretary of the Société d'Etudes Mélanésiennes in Noumea.

entirely responsible for this "deviationism." Only a part of the island was affected by this movement, that is, a region where the authority of chieftainship has been lessened through the occurrence of two successive regencies.

NEW CALEDONIA

There is not any outward forms of the "Cargo Cult" in New Caledonia. In Noumea, the trend is towards classical politics: equality claims, strikes, and so on.

In the interior, older disturbances still parallel the more modern political evolution. They were at their climax in 1940 and still go on, under cover,⁶ both in the backward north of the island (Poum, Balade, Pemboa) and the more sophisticated centre (La Foa, Canala). Magic is the principal theme following two variants: (a) a recognition of its worth as a specific native source of power, as opposed to the technical science of the west; and (b) the search and exposure, by divination, of all sorcerers and the destruction of the material means of their evil charms.

This is a reaction against the cult of the "red god" (*doki*), introduced from the Loyalty Islands in 1900,⁷ which had deteriorated into sorcery, partly under New Hebridean and Asiatic influences. Many native leaders regarded it as being the principal cause of the depopulation of the island. This is a general movement, in which heathens, catechists and pastors are alike involved. The two principal centres are linked through correspondence and the sending of messengers.

Between them, the district of Houailou stood, until last year, almost completely for communism. This can be ascribed to pre-war errors, both of the Administration, which destroyed the traditional chieftainship, putting in its place three "stooges," and to the Protestant mission, which previously had almost complete religious control of the valley.

We shall now try and consider a general conclusion. In the background of these movements we do not find any formal similarity. The social basis is in each case different. It can be Bushmen or Christians of long-standing. *The common element is a lack of balance in the actual native society*, the traditional frame having been undermined or destroyed, through the failure of administrative or missionary methods or even simply through depopulation (Santo). Because they were imposed upon the people, brand new native officials have never really been accepted and have failed to identify themselves with the interests of their fellows. A reaction was inevitable. It has created with the passing of time more and more organized and efficient structures. For the present, I cannot see any reason why this evolution should stop.⁸

⁶ Under the fear of administrative repression.

⁷ Maurice Leenhardt, *Notes d'Ethnologie néo-calédonienne*, Paris, 1930.

⁸ In Tanna, christian chiefs who remained influential were those who went wholeheartedly into the John Frum movement. The same thing happened with the Vailala madness in Papua, where the movement was used by local policemen to strengthen their position. Incidentally, the study of "Cargo Cults" should not be separated from the study of the more typical nationalist movement. They both have a common base.

JEAN GUIART.

Australia : Social Anthropology.**Berndt**

Aboriginal Religion in Arnhem Land.¹ *By Ronald M. Berndt, Research Worker, Department of Anthropology, University of Sydney.*

I am going to discuss Arnhem Land Aboriginal religion in relation to one or two cults belonging to the north-east and north-central part of that region. I am not going to discuss magic in this context, for here I am interested primarily in indigenous religious manifestations. Magic, using the term very loosely, is only incidental to Aboriginal religious practice and belief, and although we are aware that magic permeates it, it does so no more than it does any other great religion.

I am not at present concerned with comparing indigenous Aboriginal religion with Christian practice. It is true that there are many points in common, as Dr. Capell has already pointed out, but indigenous belief and faith must stand on their own legs, so to speak, and their real ingredients cannot be really understood in relation to another religion, particularly not an alien religion such as Christianity. There *are* points in common—for that matter similarly related elements exist in all great religions—but what concerns us here is the fact that great religions have existed and do exist in their own right in Aboriginal Australia. These religions too are more or less of indigenous inspiration but we are not here discussing the possible origins of that inspiration.

My plan, then, is to discuss briefly first the religious background of one area, for example, Yirrkalla, and then to discuss rather more fully the Kunapipi cult. It should also be remembered that it is possible to deal with different aspects only very sketchily. Shortness of time does not permit me to dwell in detail on any specific point.

Yirrkalla society, like other Australian Aboriginal communities, must forage for food ; and the supply of this depends on the environment. On the north coast and rivers of Arnhem Land, food of many varieties is available in great quantities. However, its constant supply is believed to depend on the rhythm of the seasons, upon the mythical characters of the Eternal Dreaming Period, and on the performance of associated ritual and ceremony. In order to ensure a constant supply of food, in the form of natural species generally, the Aborigines rely on the great ceremonial cycles of *djunggawon*, *kunapipi*, ? *ngurlmag*, and the *dua* and *juritja nara* cycles which are usual in this region. These rituals are associated with the principal Ancestral Beings, such as Djanggawul, Wauwalak, Laintjung, Banaitja and Baijini. They are the basis of indigenous religion, which in turn reflects all local belief and action. But they are not concerned merely with the provision of food. Their primary purpose is to ensure the continuation of the human species. The increase of all other animals, birds, fish, vegetable matter, etc., is only an adjunct to the main theme.

Religion has a dominant place in Yirrkalla life and is reflected in all its institutions and conventional forms of behaviour. It concerns itself with the fructification of all living things, and in that category human beings themselves are considered the most important.

The Djanggawul myth, comprising several hundreds of lengthy songs, relates the adventures of two men and two women, who in the Dreaming Period landed at Port Bradshaw,

¹ This paper formed the substance of an address to the Anthropological Society of N.S.W. on July 25th, 1950.

on the north-east Arnhem Land coast. They had journeyed across the sea from an island called Bralku, now known as the *dua* home of the dead, somewhere beyond Groote Eylandt. These Ancestral Beings are known generally as the Djanggawul or Djan'you; but they also have their own personal names. There are several versions of this myth. At Milingimbi, for instance, the Djanggawul are two sisters, who are themselves Sun Goddesses, while the two Djanggawul men are considered only incidentally. In the Yirkalla version, the leader was Djanggawul himself; the two women were his sisters, and their other companion plays only a minor part in this great cycle. In their canoe these Beings brought a large conical *ngainmara* mat, which is now used particularly by the women, and certain sacred *rangga* sticks possessing life-giving qualities. The song cycle features the perpetual pregnancy of the two sisters; their uteri are likened to the *ngainmara* mats which they brought with them, while the people who are removed from them in childbirth are the *rangga*.

This is the first of the 500 odd songs in the cycle of the Djanggawul. It is a general rendering of a phonetically recorded and interlinearly translated text. I am not attempting to include any words not given in the original; but a great deal of the real beauty is lost in translation.

We leave Bralku; I, Djanggawul, am paddling; paddling along with our flat-ended paddles;

Coming through the sea with Pildjiwuraroiju—coming from Bralku.

Splashing water as we go, and dipping our paddles in and out of the sea, from side to side:

Paddling with Miralaitj; undulating our buttocks as we paddle; carried by the roaring incoming tide.

Paddling a great distance; paddling fast through the rough sea.

Beside us the foam from our paddles; big waves following us.

Moving our arms quickly in paddling.

Djanggawul paddling along.

Paddling slowly through the sea, as the Morning Star glistens on the rippling calmness before the dawn,

Its shine lighting up the sea.

I, Djanggawul, look back, and see the rays of light leading back to our island of Bralku.

Shine that falls on the paddle as it's dipped into and drawn from the sea:

Shine that spreads from the Star's rays, from Bralku.

The Morning Star skimming the sea's surface, sent by the dancing Spirits there,

Shine following us from Bralku, like a feathered ball with string attached.

Foam and bubbles rise to the sea's surface: a large wave carries us to its crest.

The roar of the sea, the sound of our paddling, the spray of the waves, its salty smell!

We carry with us the sacred mat within which lie the sacred *rangga* objects.

An important aspect of this myth, second only to the theme of fertility, concerns the institution of sacred ritual. In the beginning, so it relates, the Djanggawul sisters themselves were the sole guardians of the religious objects and associated ceremonies. They were well acquainted with all the sacred ritual and doctrine, because this intimately concerned them. The symbols they used, and their actions in dancing, made reference to pregnancy and birth. Aboriginal men to-day speak definitely on this point: "Then we had nothing: no sacred

objects, no sacred ceremonies, the women had everything." Eventually, however, the men stole what belonged to the women and the women agreed that it would save them a lot of trouble. Now the men could carry out most of the ritual for them, while they busied themselves chiefly with raising families and collecting food. In this way, their true function as Fertility Mothers became established. Such an attitude is not confined to north-eastern Arnhem Land, but appears in the mythology of other Australian Aboriginal groups; and the important part played by women in sacred ritual is seen, for instance, in the Kunapipi.

This then is a very brief version of the complete Djanggawul cycle, without presenting any details. To both *dua* and *jiritja* moiety men and women it is of major importance, for men of both moieties take part in the *dua nara* ceremonies, although *dua* men alone are the leaders, singers and principal dancers. The Djanggawul ritual is concerned with "higher" religious thought, and most of it with sacred dancing on a sacred ground where a *nara* "shade" or hut has been constructed. This hut is really the uterus; it is there that the *rangga* are stored, and from it men emerge, to posture ritually and dance while holding these sacred objects.

If the Djanggawul are important to the *dua*, Laintjung and his son Banaitja are equally so to the *jiritja* group of clans, who hold the *jiritja nara* ceremonies. The Male Ancestral Beings Laintjung and Banaitja, with certain female counterparts, dominate *jiritja* religious ideology; but their mythology is not nearly so vivid as that of Djanggawul, nor are their ceremonies so important. Laintjung came from the sea near Blue Mud Bay, and established his cult. There, and at nearby places, he distributed sacred totemic designs to *jiritja* clans: he had also brought with him sacred *rangga*, the *jiritja* "high" totems, which he gave into the custody of the clans. Although much of the Laintjung ritual also relates to the increase of the natural species, most is only indirectly related to fertility.

When his father died, Banaitja desired to broaden and put into practice some of Laintjung's religious concepts but his efforts aroused general antagonism, and at last he was put to death. Later, however, the people to whom Laintjung had given his sacred designs and *rangga* were sorry for what they had done, and make the "likeness" of Banaitja in paperbark bound on a framework of cane. The influence of Laintjung and Banaitja, in spite of their importance, did not cover such a wide area as that of some other Ancestral Beings; and the aborigines account for this by explaining that Banaitja was killed at an early age, before he had the opportunity of travelling widely throughout this region.

It does seem that most of the great religious myths of this region are associated with the *dua* moiety, the more conservative section; it is the *jiritja* which embraces new and "alien" ideas and activities. From time to time, fully-initiated *dua* and *jiritja* men are shown the "high" *rangga*, and through the years they become increasingly familiar with the complex ritual. But the way in which they are accepted into this aspect of sacred life is not thought comparable to an initiation or age-grading ceremony. It is more in the nature of a revelation, a becoming acquainted with the inner substance of religious thought and expression. It is the *dua* Wauwalak myth that is of general importance, and is associated with the three "age-grading" ceremonies of this north-eastern region. There is also much sacred ritual not concerned with age-grading.

The two Wauwalak sisters are associated with the general concept of fertility, owing mainly to their connection with birth, afterbirth blood, and menstruation. The latter

receives a great deal of attention in Yirrkalla thought. Aboriginal women are all potential Wauwalaks; and a great deal of their behaviour, particularly at puberty, and when menstruation ceases at pregnancy, is said to be based on that of the Two Sisters. The Wauwalak myth is most important to these north-eastern Arnhem Landers, and they make frequent references to it. It has, as I have mentioned, far more general application than have the Djanggawul and Laintjung cycles; and the three separate ceremonies which concern it at Yirrkalla are each of a different nature. The commonest is the *djunggawon*, used primarily for initiation; ideally, it extends over a couple of months, and includes, in addition to circumcision and camp dancing, a certain amount of revelatory ritual, as in the case of the Djanggawul. The second of these three ceremonies is the *kunapipi*, which I shall mention again later. The third is the *ngurlkam* ceremony, performed to-day only at rare intervals. It is considered to be far more important than either the *djunggawon* or the *kunapipi*, but less so than the Djanggawul and Laintjung *dua* and *jiritja nara* rituals. There are also a number of subsidiary ceremonies, related in some degree to these two main cycles, but not by any means as outstanding.

This north-eastern culture, far more than those to the south and south-west, pays great attention to the outward expression of religious and esoteric ideology, both as a guide to ritual behaviour, and as a means of impressing certain concepts on the minds of neophytes. In addition to copies of the *rangga* introduced by Djanggawul, Laintjung and others, there are many beautifully made *rangga* relating to various totemic objects and natural species, as well as to human organs and ancestral people, used constantly as "high" *rangga* in the *nara* rituals. They are often stylized, made from various hard woods, cane or paperbark, bound with jungle-fibre twine, painted with clan totemic designs, and ornamented with colourful feathered strings. There are also human figures, carved from blocks of wood, and decorated in the same way. In the Wauwalak ceremonies many other sacred objects are used: the *uwar* drum of the *ngurlmak*, the *jelmalandji* "posts" and forked stick *djepalmandji* of the *kunapipi*, the *julunggul* trumpets and dancing posts of the *djunggawon*. There are also bark paintings, with sacred totemic clan designs, used on the ceremonial ground, or with copies of chest drawings.

All these, for the aborigine, are concrete expressions of his religious concepts, and they prepare his mind to accept the essence of sacred dogma. As symbols, they keep alive for him the reality of traditional belief. Faith is essential for social cohesion, giving meaning and significance to behaviour patterns and institutions. Its presence has been far more apparent in Aboriginal societies throughout Australia than in contemporary European groups. The majority of these aborigines, before contact, believed implicitly in the essential goodness of their own way of life. All was explained, each member of the community had a definite place in the scheme of things, and the future was well determined. To-day, however, the native on the fringe of European culture finds that social conditions are changing, his accepted beliefs have been sharply questioned, and an alien ideology is being more intensively enforced. His ceremonies are performed less frequently, his great song cycles sung less fervently, and his sacred objects and paraphernalia are gradually losing their meaning and intent. The cohesive and integrating qualities of his religion and mythology are weakened, and finally destroyed. The balance of his own cultural structure, with all its apparent weaknesses and inconsistencies, is upset by intensive external pressure and "civilizing"

influences. No longer is the pattern of his life determined by a traditional code. Instead, he discovers himself to be relying more and more constantly on alien beliefs and ideas ; but owing to the suddenness of the change and his inability to adjust himself immediately to the new ways and actions, these fail to satisfy his needs, and so he becomes frustrated and unhappy.

Let us now turn to the Kunapipi cult, having seen something of its place in the general religious scheme of Yirrkalla life.

Tidal water flowing, white foam on the waves.

Fresh water from the rains flows into the river.

There are the paperbark trees : their soft bark falls into the water . . .

Rain falls from the clouds . . .

Waters of the river are swirling . . .

She, Kunapipi, emerges, and walks on dry land.

Here we are told in six small songs of the Kadjari-Kunapipi cycle of the Alawa, of the first arrival of the Mother Kunapipi at the Roper River.

Throughout Arnhem Land, then, and the Northern Territory, through the tribal territories of groups with differing cultures and language, the sacred name of Kunapipi is known.

The Kunapipi cult is diffused over an immense area, and is known sometimes by alternate names but though its rituals and ceremonies may differ in some minor points and its doctrine may vary, its intent remains fundamentally the same and its background is similar throughout all these areas. In north-eastern Arnhem Land, the name Kunapipi expresses a dual concept. On the one hand, it refers to a Fertility Mother or Mothers, and on the other to the great Rainbow Snake. This is the symbolism of the natural instruments of fecundity. In other areas, such as the Daly River, or central-western Northern Territory, the term Kunapipi (although still known) changes to Kalwadi, or to Kadjari, translated into English as "Old Woman," or described as "Mother belonging to you and me." In the north-western and central-western regions of the Northern Territory, more stress is placed on the concept of a Fertility Mother, and less on the Rainbow Snake.

Throughout these areas, a basic feature of Aboriginal religion is the belief in an Original Mother (or Mothers), herself a Creative Being and the essence of fertility and abundance. In western Arnhem Land the Mother is the inspiration and sponsor of the *ubar* (equivalent to the north-eastern Arnhem Land *uwar* of the *ngurlmak* ritual) and *maraiin* cults. On Bathurst and Melville Islands, the Earth Mothers are said to have brought into being the human and natural species and to have introduced their system of social organization. The now virtually extinct Larakia shared this same cult ; and so did the Daly River people, who built circular stone structures to symbolize the uteri of their Mothers. The cult of Kalwadi is still strong in the north-western half of the Territory. As the Kadjari, it spreads down to the central-west, where it is met by another Kadjari cult from the Tanami-Granites desert, and the Billaluna region in Western Australia.

This Mother is always present behind the ritual, the dancing and the singing. She is a symbol of the productive qualities of the earth, the eternal replenisher of human, animal and natural resources ; it was from her uterus that human and totemic beings came forth. She has no totem herself, nor is she a totemic concept ; she does not herself perform totemic

ritual, although her neophytes do. In these areas, she is the background of all totemic ceremony, an "eternal" explanation and symbol of the Aboriginal way of life, with its continual expectation of re-birth. In her sacred mythology she may be alone, or may appear as Two Sisters; or, in some areas, the Two Sisters may be described as her daughters. For example, from the Roper River westwards, through the Victoria River district into Western Australia, her daughters are the exotic and beautiful Mungamunga, representing an ideal of young aboriginal womanhood. The Mother herself, Kunapipi, Kalwadi or Kadjari, is represented in certain parts of the mythology as an eternally pregnant woman, who in the Dream-Time let out from her uterus human beings, the progenitors of the present natives. She was responsible too for sending out spirits of the natural species from season to season, to ensure their continual increase. In this she did not act entirely alone, but in association with a Rainbow Snake, which completed the dual concept.

In drawings from Birrundudu and from Yirrkalla, artists depict human beings as totemites, flowing from the uterus of the Mother into the "ring place" (or ceremonial ground) for the performance of sacred rites. The ring place is itself the uterus. To-day, in the really important sacred ceremonies, a special ring place is used for the performance of these rituals. As the neophytes leave the camp for the sacred ground, they themselves are said to become increasingly sacred, and to enter the Mother. When the ritual is completed the Mother "lets them out." They emerge from the ring place, and pass once more into ordinary life.

All Kunapipi ritual, irrespective of region, has thus a common theme. We find in it the return to the Mother, and the eventual emergence, when the postulants come out from their sacred ritual refreshed, and as "new" men, that is, it is like a re-birth. This symbolic enactment of birth brings with it a renewal of ideals, energy and faith. Fertility and the supplying of food, sexual pleasure and satisfaction, solidarity within the group, and an undividing faith in the cult as a divine truth—all these elements are present. Food and sex, fundamental in human life, and consequently in religion, owe their continuance, it is said, to the Eternal Mother. It is not surprising that these people, living in such close proximity to nature, with few artificial distractions, should emphasize the theme of female fertility, and upon it build a religion.

It was not until perhaps fifteen years ago that the cult gradually spread northwards from Rose River to Yirrkalla, or from the Roper River district to the back of Milingimbi. And although these people did perform the Kunapipi at relevant seasons, this did not take the place of indigenous religious belief and practice. The great ceremonies of the *dua* and *jirjlia* moiety *nara* were still the most important; and the *djunggawon* and *ngurlmak* rituals associated with the two Wauwalak sisters and the Rock Pythons, retained their importance in the minds of the north-eastern and central people.

The introduced Kunapipi cult brought with it all its attendant ritual and ceremonial activity, but its original mythology became merged with that of the Wauwalak. It was, in consequence, more readily accepted by the local people: for the Wauwalak myth-cycle embraces much of the indigenous religion. Thus, instead of becoming just another introduced ceremony, the Kunapipi became a cult associated with a series of cults, having roots in indigenous mythology. The Wauwalak mythology had a great deal in common with that of the southern Kunapipi. Both possessed the same concept of fertility. The Wauwalak

sisters became indirectly the dual Mothers, continually replenishing the earth. Even the Rainbow Snake was present in the form of the Rock Pythons, who finally swallowed the Sisters. Fundamentally, too, the arrangement of the sacred dancing ground, and much of the incidental ceremony are similar to those of the *djunggawon* and *ngurlmak* rituals.

A number of ceremonies throughout the northern half of the Territory are associated with Fertility Mothers and Rainbow Snakes ; and it is possible that the majority of these cults are linked with one another, even if their outward expressions are dissimilar. But the Kunapipi cult consists of certain distinctive elements, that are found throughout the areas I have mentioned. For example, the Kunapipi held at Yirrkalla is essentially similar to that held at Birrindudu, and there is no mistaking its principal rituals. There is the spasmodic use of bullroarers ; the sacred ground itself is the uterus of the Mother ; a sacred well is dug on the dancing ground ; a crescent-shaped trench is made later ; *jelmalandji* posts are erected, immense structures symbolizing the Pythons ; there is the exchange of wives and gifts, with ceremonial intercourse ; and the forked posts called *djepalmandji* are used towards the termination of the rituals. These are features of all Kunapipi, Kalwadi and Kadjari ceremonies.

The myth that substantiates Kunapipi ritual in this area is thus concerned with the two Wauwalak sisters ; and this same myth, as I have said, serves to explain two other indigenous rituals, the age-grading *djunggawon* and the *ngurlmak*. Each of these three ceremonies, the *djunggawon*, *kunapipi* and *ngurlmak*, emphasizes a certain aspect of this myth, so that some particular feature becomes accentuated. But at the same time, to understand thoroughly the Kunapipi ritual and symbolism, it is necessary to be acquainted with the complete Wauwalak myth and again, to understand fully the importance of this concept of fertility, it is necessary to realize the place of the Djanggawul Brother and Sisters in Yirrkalla sacred life, for they were responsible in the first place for the birth of the Wauwalak. The power of fructification, however, has been transmitted to the Two Sisters.

As I have mentioned, women have a far more important part to play in sacred ritual than has been previously suspected. Women to-day are acquainted with the background of sacred ceremony and the underlying doctrines. Merely because they do not join in certain of the most sacred mysteries, women do not feel "left out" of things, or pushed aside into what has been termed by some writers a profane existence, with attendant feelings of inferiority. On the contrary, they realize that they have a supplementary function in maintaining camp dancing, and answering the men's ritualistic calls from the sacred ground ; it is necessary, for instance, that they prepare food for the men at such times, and observe certain tabus. The men, so women say, are performing these ceremonies not only for themselves, but for all the people in general and this is simply a normal extension of the sexual division of labour and activity.

It is obviously not possible to present the essence of the Wauwalak mythology in any detail. The story of the Wauwalak is rarely told in prose by a story-teller. Usually it is transmitted from one group of men to another, through the generations, by ritual actions, accompanied by explanations, on the ceremonial ground. Moreover, the whole myth is related in the sacred "inside" Wauwalak cycle of some hundreds of songs, in two main series : the "inside" Bush cycle, and the "inside" seaside cycle, each describing in detail the adventures of the Sisters. There are also the "outside" Bush and seaside cycles, sung

in the main camp to the dancing of women. Each one of these songs is representative of the very best in native poetry, and it is unfortunate that I am unable to read you some.

Summarizing very briefly indeed, the Wauwalak myth tells of two sisters, one having just given birth to a child and one who has almost reached puberty. After many adventures they reach a sacred waterhole in which, unknown to them, lives Julunggul, the Rock Python. He smells the afterbirth blood and finally swallows them and the child. Later he speaks to other rock pythons in various other territories. The core of the myth rests on various activities the Sisters go through to stop the Snake from swallowing them. Through dancing at this time, the younger Wauwalak causes her menstrual flow to begin. This leads to her and her sister being swallowed. Later they are vomited from the Snake's belly, and become alive again spiritually. A great deal of the associated ritual, as expressed in the Kunapipi, is a re-enactment of the experiences of the Two Sisters.

The myth itself is not an idle chronicle of events that occurred in the past, and are to-day without real and vivid meaning. The Wauwalak, although they lived in the *wongar* Dreaming Period, when Ancestral Beings walked the earth creating and naming various physiographical features and natural phenomena, are believed to be just as much alive spiritually to-day as ever they were. With the Julunggul python, they possess qualities and power without which, it is said, man cannot exist. He is in need of divine intervention, that will ensure his material and spiritual continuation. This power that releases the forces which are beyond man's control, but essential to his well-being, is possessed by the great Ancestral Beings who are spiritually eternal.

The crux of the matter is, how may this "power" be released? To know the sacred mythology and its intent is not sufficient; religion, to these aborigines, is not just "blind" reliance on the Ancestral Beings, an inertia based on the hope that "something is bound to turn up" eventually if they wait long enough. They must do their part in bringing about the action of the Ancestral Beings; and their way of assuming responsibility is through the carrying out of ritual and ceremony. This outward expression of their religious feeling is consolidated in ritual re-enactment of the relevant myth, thus releasing the "power" (or *dal*) inherent in the Ancestral Beings. This *dal*, no longer latent in the myth itself, then finds full expression, and fertility is assured.

Briefly, then, the myth is thought to express the intentions of the Ancestral Beings, who possess the power to carry them out; and this power is released (or brought to bear) by sacred ritual, as an enactment of the myth. It arranges the seasons, maintains an adequate supply of food, and ensures constant human procreation and continuance of the group as a whole.

Kunapipi ritual may be divided into the following parts:

(a) It is held in the dry season, when food is plentiful; for during this ceremony people are reaping the benefits of performances held in the previous year, and at the same time they are preparing for the coming wet season and the subsequent growth of food. Messengers are sent out, and chosen novices are taken away from their home camp. The Kunapipi leader makes a ceremonial ground, as well as a bullroarer; the latter is painted and anointed with blood and swung to the accompaniment of singing.

(b) Some time afterwards, the first Kunapipi ceremony takes place in the main camp; men sing "outside" Wauwalak and Kunapipi songs, while the women dance. At this time

the bullroarer is swung out at the sacred ground. This is the cry of Julunggul the python ; in answer the Kunapipi leader calls, followed by the cries of all the women. The women cry out like the Wauwalak before they were swallowed.

(c) Almost immediately after this, the young boys are taken out to the sacred ground, and as far as the women in the main camp are *officially* concerned, are "swallowed by the Snake." Later that night, the women and mothers of the boys are told, "All the young boys have gone, Julunggul has swallowed them up." And the women wail, singing the clan songs of the novices, as if they were dead.

(d) On the sacred ground a sequence of totemic dancing takes place "teaching" the young boys. In the main camp, the women dance in the same way as did the Wauwalak, when they tried to stop the progress of the Snake before their swallowing. The totemic animals, birds and vegetables that are sung and danced are those which were seen by the Wauwalak, or collected by them for food.

(e) Later the men leave the sacred ground and dance with lighted paperbark torches towards the main camp. On their way they meet the women, crouched under the conically shaped *ngainmara* mats. The men file around the mat-covered women, the leader beating his sticks and singing. The women have brought presents of food, which are handed over. The dancing men symbolize Julunggul surrounding the Wauwalak ; but in this case, the women are not swallowed, because none are menstruating or have afterbirth blood.

(f) Visitors from surrounding territories reach the Kunapipi camp about this time. Some of the above rituals are repeated : more presents are exchanged.

(g) On the sacred ground a large hole is dug ; this is the *nangguru*, representing Julunggul's waterhole. Two other holes are dug, and in each hole squats a man ; one, covered with paperbark, represents the female child of the elder sister, while another actor squats outside the hole as the "mother." In the second hole is the "younger sister," who is menstruating. The "child" in the hole cries, and the "mother" moves around it ; then both the "sisters" leave their positions and dance like the Wauwalak. A number of totemic dancers enter the *nangguru*, for in the Wauwalak mythology the animals, etc., caught by the Sisters and roasted left the fire, became alive, and jumped into the sacred waterhole.

(h) Later, a large crescent-shaped trench is dug, the *kanala*. This is an extremely important symbol in the Kunapipi ; it may signify any of the following : the track mark of the Julunggul ; the mark left by Julunggul's fall, after swallowing the Wauwalak ; the crescent-shaped position in which the Wauwalak rested in their hut before the Snake swallowed them ; the clitoris of the Wauwalak ; and its real "inside" meaning, the uterus of the Wauwalak (as a substitute for the Kunapipi Mother or of the Djanggawul Fertility Mothers).

(i) *Jelmalandji* emblems are made. Two are made, one larger than the other. Although one represents the Julunggul itself, the other is said to be the "cabbage" palm which was standing near the sacred well. It is also said to be the spirit of Julunggul.

The novices are placed in the *kanala* and covered with bark. A series of totemic dances are performed, each actor coming towards the *kanala*. The *jelmalandji* are erected at the side of the *kanala* ; the bark is thrown off the boys, and they are told to look upwards at the *jelmalandji* Julunggul.

(j) This is followed by the *djamala*, or ritual fire-throwing ceremony. Fire brands are thrown across the sacred ground, over the *kanala* in which the boys sit, and they symbolize the lightning sent by Julunggul.

(k) The *jelmalandji* are then pushed over so that they hit a pole and tumble to the ground. That is, the Julunggul are falling over after swallowing the Wauwalak.

The boys are removed from the *kanala*, while the *jelmalandji* are put in their place. Fire sticks are thrown into the *kanala* to burn the grass and paperbark surrounding the central poles of the emblems. Men open their arm veins, and sprinkle blood on to one another and into the trench; this is the blood of the Wauwalak, and blood itself symbolizes life. The *kanala* hole is then gradually covered in by dancing feet.

(l) Later, this is followed by women's dancing on the sacred ground, and ceremonial intercourse.

(m) The final ceremony is associated with the *djepalmandji*. This is erected at the boundary between the ceremonial ground and the main camp. Two forked sticks are placed upright in the ground, and a thick connecting ridge pole is placed between them, resting on the forks. This pole is hung with branches, so that the space between it and the ground is thickly covered.

Two men climb on to the forked posts; young novices are then placed under the bushes of the *djepalmandji*, so that they are completely covered and hidden from outside view. The two men who sit in the forks, are really the babies of the Wauwalak (although only one child is mentioned in the Yirrkalla Wauwalak myth). They sit in the fork, which symbolizes the uterus of the Wauwalak, and they cry ritually in the same way that a child cries when issuing at birth from its mother's womb. This is one of the most important points in this terminating series of rituals; for here, symbolically expressed, is the enactment of childbirth, a crystallization of Kunapipi intent. Under the cover of branches and bush, below the *djepalmandji*, are the young novices who have passed through all the main Kunapipi ceremonies; they lie passive in the uterus (or uteri) of the Wauwalak. Soon they will be coming out, and will be spiritually re-born, just as the Wauwalak child was born.

This is accompanied by much ritual and dancing, and finally the young novices emerge. The women see them coming out of the bushes, emerging from the uterus, all covered with red-ochre that symbolizes the blood of the Wauwalak. In conclusion, the *djepalmandji* are knocked down, and the young boys are taken to the men's camp. This is followed by a ceremonial entry into the main camp; the young boys are re-painted and decorated with headbands, and there is a general purification ceremony and final camp singing.

Ritual is an expression of the sacred mythology and releases the "power" vested in the Divine Ancestral Beings for the ultimate welfare of the tribal group. This is primarily a materialistic aim, for its specific intent is the production of necessities for the physical continuation and survival of the people; the bringing into force of an elaborate mechanism that expresses man's innate selfishness and egocentricity. But as an adjunct to this thesis, Yirrkalla religion has an underlying non-materialistic thread that is an expression of spiritual growth. Based as it is on an unquestioning faith in the religious doctrine, a belief in the omnipotence and immutability of the "eternal" representatives, a religious philosophy has been developed among the mature "thinkers" of this group. This finds its outlet in the mental exercise of meditation, interpretation, and explanation, but is nevertheless restricted by the deep faith that is a living part of all its manifestations. Within the limitation of defined premises, a certain degree of flexibility is apparent; philosophic concepts have not remained static, nor ideology stagnant. Throughout the centuries of religious development,

alien ideas have been considered and discussed, even when they were unorthodox, and apparently opposed to indigenous theology. They have been accepted or discarded ; but all have, in this way, served to illuminate and extend the basic principles that explain to the aborigines man's place in his environment, and his inter-relationship with the Divine Beings who are possessed of the power of animation and are the seat of knowledge.

Let me mention again the outstanding role undertaken by women throughout the performance of the Kunapipi ceremonies. At no time do they feel themselves forcibly secluded from purely male activity, while at intervals they take an active part. They know that the rituals are principally concerned with peculiarly feminine functions, and that men are carrying out the more strenuous features of ceremonial life. The question of whether women are profane, as opposed to the aura of sacredness pervading a male participant at such a ceremony, does not enter into Yirrkalla thinking. Even when ritually tabu because of afterbirth or menstruation blood, a woman is within the concept of sacredness, for her blood and her other activities themselves are sacred. They are focal points in the religious doctrine.

In the Kunapipi, moreover, the women enter the sacred ground of the men. This is a feature that rarely occurs in the ceremonies associated with other cults. Upon entering the ground, the women themselves become more definitely sacred. They re-enact something of what they themselves originally possessed in the mythological period, and what was stolen by the men. They use the sacred symbol of the Julunggul python, and the tree that was split by his lightning, and through their actions they represent the origin of the men's sacred bullroarer which no woman is supposed to see. They dance the ritual of the great Python, "and the men hang their heads in fear."

I have indicated something of the religious background of Yirrkalla life and something too of the fundamental doctrine of the Kunapipi cult, based as it is on the essential human and animal drives of food and sex, and including such important aspects as the maintenance of food supplies, and procreation, necessary for the continuation of both human and natural species. In this respect the Kunapipi religious cult is not unlike many others that express the hopes and desires of simple and sophisticated peoples alike. And even when its principal intent is materialistic, it does not exclude spiritual conceptions ; in fact, these latter are of major importance.

Here, then, in Aboriginal Australia, among contemporary aborigines, exists this vivid and vital cult, expressing their own religious view of life. It is correlated with the traditional background and social institutions of these people and intimately concerns their spiritual and psychic personality structure. Moreover, it is well adapted to their particular environment, since the great Spirit Beings themselves are associated with the country the aborigines know and love ; and each man, woman and child has a part in this religious concept, for he (or she) is akin to the Mother. That is to say, the religion of these people has grown out of their particular material and spiritual requirements, in such a way that it is a very real and important aspect of each person's life. There is no sharp demarcation between secular and sacred life, because the one is so closely interwoven with the other. This religious concept, too, is not confined to men ; it is equally important and significant to women. Each sex has its own particular sphere of activity and interest.

The religion of an indigenous native group, which has had little or no alien contact, is a living faith, something quite inseparable from the pattern of everyday life and thought.

With the introduction of alien ideas, through intensive European contact, this fundamental faith is shattered to a greater or lesser degree, according to the intensity and type of that contact. In most parts of Arnhem Land where Missions have been established, there is the impact of Christian teaching, of ideals which are not intimately concerned with the life of the native people, which often contrast sharply with indigenous traditional themes, and which belong, themselves, to a strange and different cultural background. It is not to be wondered at, then, that the repercussions of this impact are frequently severe.

Christianity, with its attendant ritual and belief, is apparently inseparable, in this context, from Western European culture, and for that reason it assumes a dominant and militant aspect. The indigenous culture on the other hand, lacking the other's wide range of material objects and technology, and the subtleties of fanatic evangelization, seems as a rule powerless to resist.

The balanced life and economy of the aborigines has been drastically upset, with resulting disorganization. The Kunapipi too has suffered, and is rarely seen in its entirety to-day, although its basic rituals and concepts have as yet remained relatively unaltered. Its adherents have, however, been driven to secrecy; and its ceremonies are for the most part carried out in the bush, away from Mission stations and settlements.

We might well ask, what is the future of a cult like the Kunapipi. Can it continue to exist in its present form, in a situation of culture contact? Example has shown that under abnormal conditions, when the inroads of an alien culture have attacked the social structure of the indigenous society, its survival odds are relatively low. Collapse of Aboriginal community life brings disillusionment, loss of faith in accepted doctrines, and consequent maladjustment. That is to say, as contact becomes more intensive, a cult of the Kunapipi variety will become correspondingly corrupted, and its principal intent will be overshadowed by the distortion of certain aspects which will inevitably serve to destroy it completely.

On the other hand, a cult of this type, which so adequately fulfils an aborigine's religious requirements within his own cultural environment, is so much a part of his material and psychological make-up, and expresses the basic urges and necessities of his life, should surely find some place in his changing society, among widening interests. And this should ideally be the case if the aboriginal is to retain something of his individuality, and not become merely a stereotyped imitation of the European. But this ideal form of adaptation is not to be found in North Australia to-day, and there are no indications that it will be so in the future. The indigenous religious faiths, although in some areas they still retain their full significance, are in others gradually changing, and their hold on the people's life is weakening; and in some regions they are merely a shadow of their former selves, distorted to meet the selfish aims of a few maladjusted and frustrated tribal remnants.

Still, however, in outlying camps where aboriginal life proceeds comparatively undisturbed (and there are few such areas to-day) the twirling bullroarer is heard, and the answering call of the women; there is rhythmic singing, and the stamping of dancing feet on the sacred ground echoes through the quietness of the bush. People have come together to renew their faith, to refresh themselves spiritually, and to ensure that the continuity of the seasons is maintained, as well as the continuance of the life they know and appreciate. The pervading influence of the Great Mother is, to them, a reality.

RONALD M. BERNDT.

Australia : Social Anthropology.**Harney****Australian Aboriginal Cooking Methods. By W. E. Harney.**

"Just like the food my mother cooked for us." This remark was made, partly in joke and partly in earnest, by an Aborigine who had been a long time with the whites, while he was eating a concoction of cycad nuts, a food that smells to high heaven but is much appreciated by the Aborigines. It gives a jolt to the stock joke about the Aborigine killing his game, tossing it on to the glowing embers of the fire, eating it partially cooked or warmed, and then casting the scraps behind him to the waiting woman, who in her turn munches her share and hurls the bones to the pack of curs waiting patiently behind.

The Aborigines' meat was often underdone. Hunger or perhaps experience was the reason, for they were no fools and might have learnt how to get the most benefit from their foods. To them vitamins were a matter of "instinct," and lack of them in a given food drove them elsewhere to procure the needed diet. Natives at one place will often remark that they *must* go to another place to eat possum or some other food, and the way they emphasize the *must* suggests that they are performing a duty or that an inherited or deeply-rooted drive compels them to move at that time of the year.

In the past, the Aborigines moved from place to place gathering food, each type of food requiring a different method of preparation. Sea-foods are often washed in cold water before eating. Pods and certain yams are soaked in water. Honey must be eaten with a special grass. One type of animal is cooked in a different manner to another. Indigestible substances are prepared by moistening them on the grinding stones with water squirted from the mouth, and other foods are only eaten after they have been pounded between large "digerter stones." Some foods are eaten raw, whilst others are well cooked.

Those people who have eaten native food cooked native fashion can attest to its staying qualities. It may look, to our eyes, rather crude, but to the Aborigines "everything edible is food." It is, however, according to its staying quality that a substance is judged. From this comes the division of foods into "Light and Heavy." Pale watery yams, honey, berries and oysters are light foods, while red beef, eggs, fish, game, heavy yams, prepared lily and seed-pods are amongst the heavy foods. This grouping has not been made on the say-so of some expert on cooking, but from the satisfaction derived from the substances. Thus, an Aborigine who was eating "sugar-bag"—wild honey—remarked that it was good food but made one "fullup, all the same wind." By this he meant that one could be filled, yet never satisfied, and would soon be hungry again.

Heavy flesh foods include dugong, turtle, kangaroo and wallaby, emu, bandicoot, opossum, monitor lizard, wild fowl such as turkey, goose and duck, and the ever sought after flying-fox. Only a few are mentioned, but each one requires a different method of preparation, that is, a style which suits the taste, or has been developed by them from experience.

Kangaroo and Dugong.

A hole like a shallow dish is scooped out of the earth, and in this a fire is made, the hole and fire varying with the size of the food to be cooked. Stones or pieces of ant-bed are placed on the fire and allowed to get red hot as the fire burns down. A layer of hot stones or ant-bed is left on the bottom of the oven. Over these stones a layer of green and wet leaves is laid.

River gum leaves, the " demallang " of the Wadaman Aborigines, is often used as a substitute for salt, but in other tribes near the salt-water, honeysuckle or some other favourite seasoning bush is used.

Whilst these are steaming, a layer of meat, which has been cut with the skin on, is laid on the stones with the skin underneath, then more hot stones and leaves are put on top of this, the process being continued till the whole of the beef is neatly packed in the oven. The hot stones of the oven are handled with pieces of paperbark or queer bat-shaped paddles used as a pair of tongs. Sheets of paperbark or grass are placed over the top to cover all the beef and over these a thick layer of earth is placed, care being taken that no earth gets in and no steam escapes from the cooking beef.

The quantity of meat cooked determines the time of cooking. Large quantities, up to five hundred pounds weight, can remain all day in the oven, while small lots of a few pounds are cooked in an hour.

Turtles.

The big sea-going turtle and not the small fresh-water variety, is cooked by first making a large fire, and throwing the complete creature on it to burn it well, and, according to the natives, to " drive back the juices into the flesh." After this first burning, the turtle is taken off and cut open along the neck. The eggs, if any, are carefully taken out and laid aside, with the liver and other solid pieces of flesh. The intestines are the tit-bits for the cooks.

After cleaning, the hot stones of the ground oven are dropped into the neck aperture, the entrance being blocked up with grass, and the whole turtle is placed in the ground oven, back downwards, and covered with stones and coals.

The long gut and gullet of the turtle are now cleaned by being turned inside out, and into them are put any eggs that were found in the turtle, and the ends are tied up. These egg sausages are cooked under hot sand or ashes, and when cooked into a hard boiled mass can be carried for many days.

After the turtle has been cooking a while, the time depending on the patience of the hungry hunters and their wives and children, the hot embers are scraped away and as soon as it is cool, the breast plate is removed and the fore and leg quarters cut out. The carapace, or shell, which forms the back of the turtle now becomes a dish, and is full of a rich soup formed by the cooking beef. This can be ladled out and eaten from plates, but the natives, always communal, get around the shell as it rests in the fairly cool oven and drink up the juices with their mouths; a real beach obligato, with accompaniment of crying children, yelping dogs and bobbing heads keeping time to the music.

Bandicoot, Opossum, Flying Fox, etc.

These are rarely cooked in ground ovens, but are just placed on an open fire with coals packed over them. The opossum is always gutted, but the flying-fox never. Burnt opossums have a rare flavour with a touch of eucalyptus, but none of the flying-fox is wasted. Every bit is eaten except the gall and the bladder, and Aborigines have told me that after a prolonged feast of many weeks on these " dainties " their urine turns greenish in colour.

Game.

Bustard or plain turkey is hunted by the natives by lighting fires in the grass. By keeping close to these bush fires they knock over the birds with throwing sticks as they run through the smoke after grasshoppers. These birds are always fat in the winter months, especially if they live in country where the "gum" grows on the "pear trees" that line the rivers and creek flats in parts of the Northern Territory. After plucking the birds, they are gutted by opening them along the backbone. A small oven is made, the stones being heated as in the larger oven. These hot stones are now wrapped in wet "lemon-grass" and placed inside each bird with the leaves of a special bush laid on top as an outside flavour. The lot is covered carefully with bark and earth, and after an hour's cooking the result is equal to any oven dish. At times a layer of yams is placed around the birds and the lot cooked in its own steam.

Ducks and geese are often cooked in this manner, but in many instances these are split open along the back, flattened out and cooked by placing them upon the coals of the fire.

Reptiles.

These are all cooked in the coals of the fire. They are first heated over the blazing fire to drive in the juices. Monitors and other lizards are gutted through the anus, and by an insertion under the forearm, the gall bag is removed so that it will not burst and taint the meat. Careful handling of fat monitors is always essential before cooking so that the ball of fat—a special treat—does not burst and be lost in the cooking.

A snake is cleaned in the same manner as a monitor, and is then stretched over a fire by a native on each side. This softens the muscles which, otherwise, would cause it to shrink into weird shapes. After it has stopped twitching, a small incision is made along each side of the snake's backbone for its entire length; it can now be rolled into a neat coil, which does not twist out of the coals during the cooking. Eggs inside these reptiles are not disturbed in the gutting, and cooked within, come out as a special tit-bit.

Fish, etc.

Fish, sharks, stingrays, oysters, cockles, toredo worms and such sea foods are treated in various ways.

Crabs and fish are cooked on, or in, the coals. Those that live on mud are gutted, whilst those which live on flesh foods are cooked whole. The fresh-water cod is gutted through the mouth, the fat being put into the air sack, tied up, and put back again inside. It is then cooked under the ashes.

The stingray is first cut open to get at the large creamy liver, and, if this is brown looking, the fish is thrown away. If, however, it is as it should be, the liver is placed aside and the flesh cooked over an open fire.

When cooked, the flesh is well shredded and washed in fresh water which becomes milky coloured from the oil in the fish. After two washings the white cotton-like flesh is made into balls, a ball for each person present. The liver is equally divided and, in the raw state, is placed on top of each ball of flesh, handed around and without any further cooking is eaten. Some natives prefer to pass a heated fire-stick over the liver to warm it up, but in the past it was eaten raw.

Small gummy sharks are also cooked by this method. Shellfish are cooked lip down on the coals of the fire, and when cooked are soaked in fresh water before eating. Toredó worms are often treated in the same manner.

Vegetable Foods.

The chief vegetable foods are wild yams, cycad palm-nuts and water-lilies. Two types of yams are gathered, the mild ones which can be dug up, cooked and eaten without any preparation, and the "cheeky ones" which are bitter and poisonous and must be prepared before they can be eaten. Experience alone can tell one from the other. The best rule is to leave them alone and ask the experts' advice and indeed to get them to eat one to back up their assertion.

The good yams are just cooked in the coals and eaten but when these are of a fibrous nature they are pounded by the cooks between "digester stones" as an aid to digestion. Many yams can be eaten raw, but these are considered light foods. "Cheeky" yams are gathered, cooked in earth ovens, and then sliced and soaked in running water to take out any poisonous or bitter matter. Prepared in this way they can be safely eaten.

A good rule when dealing with any unknown native food is to prepare it in this manner. Even putrid meat placed in running water by Aborigines for a few days before cooking becomes quite edible.

Along the coastal belts of the Northern Territory the Cycad nut is the food par excellence. Nearly all ritual grounds are near these patches. A Melville Island man said: "In my country we fight over the *korka* (the Cycad)."

In Melville and Bathurst Islands the cycad, being poisonous, is prepared as the "cheeky" yam, but in all other places it is gathered, taken out of its hard skin, sliced up, then dried in the sun. To slice this food the natives of the Karawa tribe always preferred a knife made from the bladebone of a wallaby. They said it was sharper and cut better than a steel knife. The dehydrated article, once treated, could be carried for barter over long trails. When needed, it was soaked in water for three days. The pulp was then ground on stone mortars and put into a bark dish. It was then rolled in paperbark and cooked under the coals as a bushman cooks his damper. When taken out, it resembles a large damper covered with a paperbark skin. This is peeled off as the diner eats into the food.

Owing to fermentation after cooking, the *munja*—the name of the cooked nut in the Kurawa tribe—becomes very "high," but as with strong cheese, this is regarded as a sign of excellence, a fact to which many bushmen who have lived on it can testify.

In Borroloola, with acute food shortage caused by delay in shipping, the dried cycad nut was always kept by the whites as a standby in times of emergency. As the flour bag became low a little of the soaked nuts was added to the damper or bread, and this went on with the proportion of cycad nut becoming greater as the flour bag became lighter, until finally, both blacks and whites would be trying out new recipes of the *munja* palm.

Another method of preparing this food was to put the nuts into a long trench and cover this with grass and paperbark. It was then left until the Aborigines gathered for a big ritual. I saw this at Manangoora on the Wearyan River.

When all was ready the nuts were uncovered. The "high" smell that swept over brought shouts of praise from the Aborigines with corresponding curses from any whites who happened to be camped on the windward side of the "tasty dish."

Of all plants growing in the Northern Territory, the water-lily is the best food. Covering the lagoons with a mantle of blue and white blooms, it is a larder for the tribesmen, whose country includes such lagoons.

The root tubers found in the mud at the bottom of the plant provides a yellow floury food, which is cooked in the coals of the fire. The stalks, which carry the pods, are very rich, as witness the breasts of mothers expanding after a few days on this diet. At times the stalks are dried in the sun to make them sweeter.

The seed pods are gathered, ground on stones and cooked in the same way as the cycad nuts. Care is always exercised when preparing them, for they are highly indigestible. The natives squirt water from their mouths on to the dry seeds as they grind them into a pasty mass. Even when cooked in a cake-like form it is well chewed by mothers before being given to the children to eat—surely the result of the lessons of experience handed down through the generations!

These are but a few recipes, but enough to show that the Aboriginal people knew a little of the culinary art. But why do they do the things in the way they do? Why do they soak certain grasses in such "light foods" as honey and then suck the grass? Does it give the honey greater qualities by allowing more saliva to be mixed with it?

Why do many tribes eat chalk or give their children ant-bed to chew? At Bathurst and Melville Island the people eat large quantities of it. It is baked in a fire and eaten like any other food.

What first gave them the idea of soaking green tree ants in water to make a sort of lemonade which they use as a cure for headache, or to soak flowers, such as honeysuckle, in water to give them a sweet drink?

All this and much more has been discovered and used by the Aborigines of the Northern Territory. "All things edible are food" is their motto, and the care and preparation of food are as essential to their welfare as are the hunting and gathering of it from the bush around them.

W. E. HARNEY.

Australia : Archæology.

Balfour

A Phallic Stone from Central Australia. *By H. R. Balfour, Esq., Vice-President, Anthropological Society of Victoria.*

The phallic stone, which is the subject of this article, came into my possession through Mr. W. H. Gill, who found it at Koparilja, near Hermannsburg, Central Australia, in 1930. I visited the place where it was found in 1937, along with the late Rev. J. R. B. Love and my brother, Dr. J. Balfour.

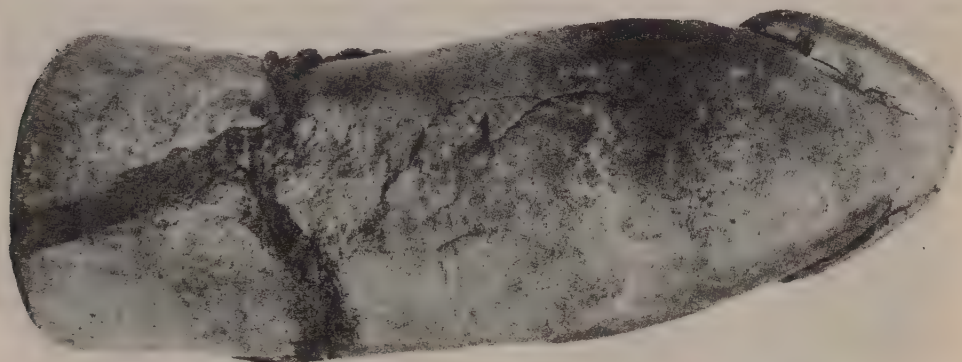
The three of us arrived at Oodnadatta on 23rd May, 1937, and left immediately for Ernabella, on the edge of the Musgrave Ranges. We stayed there for a short time and then proceeded by camel through the Range to Ayer's Rock and Mount Olga and back again to Ernabella. On the 19th July we left for Oodnadatta and arrived back in Melbourne on the 23rd July.

The stone is known to the natives as *Kwatjaparra*, or The Thunderbolt, and the following legend concerning it was told to Mr. H. A. Heinrich of the Hermannsburg Mission Station, Finke River, by Rauarinja, a native of the Arunta tribe, in 1930.

West of Koporilja, there is a big hill whose name is Nkalla-lutna. At Nkalla-lutna, in mythical times, there was a rain-man whose name was Nkanjia. He was an important man, being connected with thunder.

In a cave a little way up the creek from Koporilja there was another rain-man, whose name was Ero'amba, which means Big Cloud.

Right at the spring at Koporilja there was another rain-man whose name was Inamana, which means Big Rain. A little way down from Koporilja, where a little creek comes in from the west, there was another rain-man whose name was Larkaka, which means lightning, i.e. sheet lightning.



Up from Koporilja, at Abbetalbetala, there was another rain-man whose name was Kotulba, which means "Thunderbolt," i.e. the lightning that strikes.

One day the rain-man Nkanjia, who was at Nkalla-lutna, said to the rain-man Ero'amba: "Grow no more You." Thereupon the rain-man Ero'amba grew no bigger and the skies no longer became overcast.

Then the rain-man Nkanjia who was at Nkalla-lutna said to the rain-man Inamana: "You are not to rain all the time." Thereupon the rain-man Inamana ceased to rain all the time.

Then the rain-man Nkanjia who was at Nkalla-lutna spoke thus to the rain-man Larkaka: "You are no longer to make lightning all the time." Thereupon the rain-man Larkaka ceased to make lightning all the time.

Then the rain-man Nkanjia who was at Nkalla-lutna said to the rain-man Kotulba: "You are not to throw thunderbolts." Thereupon the rain-man Kotulba ceased to throw thunderbolts.

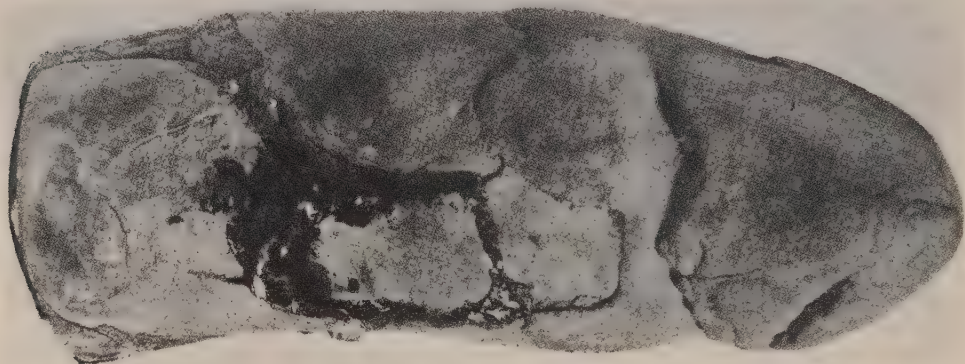
Then the rain-man Nkanjia who was at Nkalla-lutna again spoke: "Behold I am truly the very big rain-man, all the other rain-men obey me."

Speaking like that, Nkanjia, who was at Nkalla-lutna, saw another rain-man coming from the east. This rain-man's name was Imbotna, which means hail. He came from Njambanga. This rain-man Imbotna did not come openly, but sneaked up.

The four rain-men Ero'amba, Inamana, Larkaka and Kotulba, did not see the rain-man Imbotna come up. Imbotna came quite close up to them and undid their hair so that it hung over their shoulders. Then a big rain came. The rain encircled them so that they could not see anything. Thereupon the rain-man Imbotna dragged them, the four rain-men Ero'amba, Inamana, Larkaka and Kotulba, and wanted to take them back to his place at Njambanja. They all walked to Alkrabanta down the creek about eight miles from Koporilja.

When Nkanjia saw that Imbotna was taking the four rain-men with him, he got very angry and talked very loud, i.e. thundered. Thereupon big clouds rose up and covered the whole sky, and then much lightning flashed, and much rain fell, and many thunderbolts struck the ground.

This happened at Alkrabanta.



Imbotna when he heard Nkanjia's loud talk (thunder), proposed at Nkalla-lutna to fight Nkanjia. They fought for a long time.

Imbotna tired first and became a Churinga, a little down from Koporilja.

Nkanjia also grew tired and became a Churinga at Nkalla-lutna, his place.

But Ero'amba went to Latnima (now Glen Helen Station) from Alkrabanta. Thence he went to Imokkana where there were several rain-men. There he grew tired and became a Churinga.

Inamana, from Alkrabanta went to Ntarea, a half mile west of Hermannsburg. From there he proceeded to Njambanga, Imbotna's place.

There he grew tired and became a Churinga.

From Alkrabanta, Larkaka went to his aunt to a place called Tjakala. His aunt was a spinster. When she saw Larkaka approach she danced, shaking her thighs, causing the lips of her vagina to tremble. Lightning came out of her vagina. Larkaka entered her vagina. Thereupon both became Churingas.

Kotulba, from Alkrabanta went back to Albetalbetala, his place. There he stayed.

Whenever Nkanjia spoke, i.e. thundered, his penis became erect. (He was not sub-incised, only circumcised.) When erect, he passed fire instead of urine, often setting trees alight.

He then also caught hold of his long big penis and hit trees, smashing them. One day his penis broke off, was turned into a stone, and became a Churinga. Kotulba himself thereupon proceeded to Njambanga, where he grew tired and became a Churinga.

H. R. BALFOUR.

Australia : Material Culture.

Gill.

Aboriginal Kitchen Middens and Marine Shell Beds. By Edmund D. Gill, B.A., B.D., *Palaeontologist, National Museum, Melbourne.*

The literature on Australian aboriginal coastal kitchen middens was recently examined in connection with a research project, and it was noted that there has often been confusion with marine shell beds. Both geologists (e.g. Pritchard, 1919) and ethnologists (e.g. Kenyon, 1927) have commented on this. In Pleistocene and Holocene times there were higher sea-levels which left along our extensive coastline shell beds now standing above high-water mark. From experience with both kinds of deposits, the writer has formulated the following criteria for distinguishing between them.

DISTINGUISHING MARKS OF KITCHEN MIDDENS.

(1) The presence of charcoal, burnt wood, blackened shells and such evidences of fire which are not on the surface (as when caused by bush fires or by campers) but extend through the deposit.

(2) The charcoal and shells often have a rough stratification, but there are none of those fine features of sedimentation such as are commonly found in water-laid deposits.

(3) The presence of aboriginal implements, and/or of numerous unworked flakes of flint. Commonly found also are pebbles of hard rock which could not occur there naturally. These appear to have been used as cooking stones and hammer stones.

(4) The presence of shells, always of extant mollusca, which do or could live on the contiguous coast. For instance, one does not find middens of sand shells such as *Donax* on a long stretch of rocky coast, or middens of rock shells such as *Turbo*, *Haliotis* and *Patella* in a muddy estuary or on a stretch of sandy beach. Indeed, it has been noted that there is a very close correlation between the shells of the middens and the facies of marine life present on the adjoining coast. The changes in coastal physiography are accompanied by equally great changes in the molluscan fauna and thus also in the shells of the middens. This may be illustrated from western Victoria, where *Donax* middens (i.e. midden assemblages dominated by the genus named) occur behind sandy beaches, *Turbo* middens where there are shore platforms, and *Patella* middens where old lava flows run out into the sea and consist of large boulders, but no shore platform is present. At Picnic Point, Port Phillip, *Mytilus* middens have been recorded (Gill, 1950). Anderson (1890) described *Ostraea* middens in New South Wales, Roth (quoted in Chapman, 1929, p. 107) mentions *Arca* middens on the Gulf of Carpentaria, and Pulleine (1929) provides an account of *Haliotis* middens in Tasmania (p. 310).



DESCRIPTION OF PLATE O.

Upper photograph shows horizontal and vertical sections of a midden made by the sea at Tower Hill beach, north end, next Merri Cutting (former exit of Merri River, see background). Note the blackening by charcoal, aeolian bedding (foreground section), shells, and hammer stones of basalt. The sandy beach rests on tuff and lapilli from the Tower Hill volcano nearby.

Lower photograph is a vertical section of a midden made by the wind at Shelly Beach, near Thunder Point, Warrnambool, Victoria. Note the non-sedimentary type of stratification, the shells of edible types and sizes, and a predominance of *Turbo* which could not occur naturally in this area. The midden rests on a platform cut in Pleistocene aeolianite.

In the few places where there is lack of correlation between the facies of the midden shells and the facies of the present coastline fauna, this has been found to be significant. For example, in one place middens of rock shells were located where there are now sandy beaches, and this was found by geological and historical investigation to be due to big movements of sand resulting from the removal of natural cover from dunes since occupation by white people. The sand has covered the rocky outcrops where the shellfish used to live.

Thus almost without exception there is a definite correlation in facies between the shells of the middens and the extant local marine fauna, whereas with emerged shell beds the facies may be quite different, or more often still, shells from a number of facies have been washed together into the same bed.

(5) Midden shells are of edible species and of edible sizes, but in the emerged shell beds there are numerous shells of species too small for food, and of all stages of growth including sizes too small for food. This criterion is very useful, but it should not be applied in an absolute fashion. A few shells of non-edible kinds and sizes were transported to middens attached to larger shells, and some shells were used for ornaments (Brough Smyth, 1, p. 279; 2, p. 251). However, such shells are comparatively scarce in middens, and in no way compare with the proportion found in marine shell beds.

(6) Sometimes aboriginal kitchen middens give evidence of a degree of selection which could not apply to marine shell beds. For example, east of Cape Nelson, western Victoria, two middens were noted about half a chain from one another. At each there was a native fireplace with numerous burnt stones, flint flakes, and shells of edible kinds and sizes, all in good condition, i.e. they were not tossed up by a storm. However, one midden consisted entirely of *Haliotis* and the other consisted entirely of *Mesodesma*. This suggests that either the aborigines exercised a selective taste, or that the meteorological conditions were such that at one time the *Mesodesma* sand shells were available but not the *Haliotis*, which are generally collected from over the edge of a shore platform. As the aborigines were so markedly omnivorous, the second appears to be the better explanation in this case, especially as each *Mesodesma* shellfish provides so little food compared with the fleshy *Haliotis*. However, the point is that the degree of selection found in middens does not occur in marine shell beds. Anderson (1890) noted in New South Wales middens that "there are often local layers which consist almost entirely of specimens of one genus" (p. 55).

(7) As midden shells are collected by hand from where they live, their surfaces are not worn as is the case with most beach shells. This point was also noted by Le Souef (1916, p. 8).

(8) Yet another characteristic of coastal kitchen middens which distinguishes them from marine shell beds is the detail of the fracture of the shells. "It will be noted that all the limpet shells found in the natives' middens have a small portion of their edge broken, which was done when they were obtained" (Le Souef, 1916, p. 7). Chapman (1929) and Voisey (1934) have made similar observations.

(9) Unmistakable are the middens which in addition to the shells have aggregations of the bones of land and sea animals used for food by the aborigines. The best example of this known to the author is a midden (or rather, series of middens) extending for a mile along sand ridges at Tower Hill beach, Armstrong's Bay, western Victoria. Kenyon (1912, p. 104) gave an account of this site as follows: "Whale, seal, and fish bones are numerous . . .

Bone implements occur sparsely except at certain centres. At Armstrong's Bay, and the vicinity, bone implements, of all sizes up to eighteen inches in length, with flat chisel or more or less blunt needle points abound." Mahony (1912) gave an account of the bones found in these middens, and listed the following :

<i>Sarcophilus harrisii</i> Boitard	..	..	Tasmanian Devil, now extinct on mainland
<i>Macropus major</i> Shaw	..	..	Kangaroo
<i>Vombatus hirsutus</i> (Perry)	..	..	Wombat
<i>Dasyurus viverrinus</i> (Shaw)	..	..	Native Cat
<i>Trichosurus vulpeculus</i> (Kerr)	..	..	Silver-grey Possum
<i>Pseudocheirus laniginosus</i> (Gould)	..	..	Ringtail Possum
<i>Perameles</i> sp. .. ..	..	..	Bandicoot
<i>Rattus norvegicus</i> (Erxleben)	..	..	Rat
<i>Vulpes vulpes</i> (Linnæus)	..	..	Fox

The nomenclature has been brought into line with that of "The Mammals of Victoria" (Brazenor, 1950). From the author's collection of bones from this site, Mr. Brazenor, who is Mammalogist at the National Museum, has kindly verified doubtful determinations in Mahony's list, and determined the following :

<i>Thylogale billardierii</i> (Desmarest)	..	..	Rufous-bellied Wallaby, recently become extinct in Victoria
<i>Potorous tridactylus</i> (Kerr)	..	..	Rat-kangaroo
<i>Dasyurus maculatus</i> (Kerr)	..	..	Tiger Cat
<i>Isodon obesulus</i> (Shaw)	..	..	Short-nosed Bandicoot
<i>Gypsophoca tasmanica</i> (Scott and Lord)			Fur Seal

Human remains have been found associated with these middens, and a skull from the vicinity has been figured (Keferstein, 1865).

DISTINGUISHING MARKS OF EMERGED SHELL BEDS

Emerged marine shell beds are often called "raised beaches," but Zeuner (1945, p. 226) has rightly pointed out that this description is inaccurate. The criteria by which to recognize such beds include the following :

(1) They are generally stratified, and show the sedimentary features of water-laid deposits. The shells lie in relation to this stratification, and sometimes there is a marked uniformity of orientation of the shells, e.g. the shells may be mostly with their concave sides upwards, or *vice versa*. Sometimes the lamellibranchs have both valves still together, and the shells may even be in their position of growth (a biocoenose), a condition of course never found in the middens.

(2) Marine shell beds, in contrast with middens, have shells of non-edible as well as edible types, and shells at all stages of growth, not just the edible sizes. The proportion of nepionic to adult shells can assist in reconstruction of the conditions of deposition. When a molluscan population is suddenly wiped out by a suffocating influx of sediment or for some other reason, the proportion of nepionic specimens is unusually high.

(3) The shells are often worn, due to transport, or to washing up and down the beach. Shells in a beach ridge are usually worn and broken, those from the beaches worn, while those deposited in deeper waters show only signs of transport or are complete.

(4) In marine shell beds there are numerous examples of other forms of life besides those used for food by the aborigines, such as corals, calcareous worm tubes, polyzoa and calcareous algæ.

(5) On the negative side, it may be said that there are no evidences of fire, no rich intermingled bone fauna, and no artefacts in the emerged shell beds.

THE ABORIGINES AND SAND.

Kenyon (1912) drew attention to the aborigines' preference for sand as sites for coastal middens. He wrote: "Camps are generally found on sand hills and rises where such exist and on the loosest portions of them. In fact, wherever blown sand occurs, one may look with confidence for aboriginal remains. The exceptions to the sandy camps are the 'oven mounds'" (p. 99). Keble (1928) came to the same conclusion after his survey of the Mornington Peninsula, and it is true within the writer's experience. How far this is true round the coasts of Australia one is not in a position to say, but comment by authors would be enlightening. Emerged shell beds of both sandy and muddy facies occur, of course, and if it could be established that aborigines always sought out the sandy sites, it would be a helpful generalization for both ethnologists and geologists.

ACKNOWLEDGEMENT

I am indebted to Mr. D. J. Tugby, B.Sc., Ethnologist at the National Museum, for reading the manuscript.

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E. D. GILL.

OBITUARY :

Mr. GEORGE W. WATKINS

In the death of Mr. George Watkins in 1949, the Society lost a most enthusiastic and helpful member of its Council. He became a member of the Society in 1935, was Honorary Secretary from 1940 till 1943, and a Councillor from 1943 to 1949.

George Watkins was born in Hobart. His interest in writing found expression whilst he was still a schoolboy, when he began contributing paragraphs to the *Daily Post*. His first job was in the Department of Education, where he remained until he was twenty-one. He often spoke of his great interest in the Tasmanian aborigines to the Director, Mr. McPhee, who took a personal interest in his career. He left Tasmania to become Editor of the *Horsham Times*, thus becoming one of the youngest editors of a newspaper in Victoria. His next move was to the *Melbourne Age*, on which he served as a reporter for ten years, ultimately specializing in political matters. After a brief period with *Cable Services* in Queensland, he became Political Editor of *The Sydney Morning Herald*, and here he spent another decade of his life. In 1937 he became a parliamentary reporter at Parliament House, Sydney, where he remained until his death.

Although golf and gardening were his hobbies, his main relaxation was reading. He did not write on anthropology, but he was intensely interested in the subject. This interest was centred mainly in the Tasmanian aborigines, about whom he assembled a fine library, which included many reproductions of early illustrations of these natives. He was also greatly interested in the welfare and future of the Australian Aborigines. His cheerful manner and warm enthusiasm are well known to his wide circle of friends, to whom his sudden death was a great shock. To Mrs. Watkins we extend our deepest sympathy.

F. D. MCCARTHY.

PROCEEDINGS OF SOCIETIES :

Annual Report of the Anthropological Society of New South Wales, 1950. *Summary of the report delivered at the Annual Meeting of the Society, 28th November, 1950.*

The Council has much pleasure in submitting to members the twenty-second Annual Report for the year ended 30th September, 1950.

Total membership is now 145, comprising one benefactor, four life members, seven honorary life members and 132 ordinary members.

Miss Dorothea Mackellar became the Society's first benefactor.

During the year the following new members were elected : Mr. J. R. Ryan, Miss J. Watkins, Mr. R. K. Rose, Mr. D. B. Raymond, Mr. Byran Mansell, Mr. A. E. Fordham, Mr. E. K. Houison, Miss J. Craig, Mr. R. E. Booher, Mr. K. Mayfield and Mr. C. Draper.

Four members resigned, and we regret to announce the death of one member, Mrs. E. F. Pollock.

Six general meetings were held at the Department of Anthropology, University of Sydney, at which the following lectures were delivered :

1949 :

November 1st.—“Aboriginal Woman,” by Mrs. Catherine Berndt, M.A.

December 6th.—Annual General Meeting. Presidential Address entitled “Aboriginal Religious Practices,” by Dr. A. Capell, M.A., Ph.D.

1950 :

February 7th.—“Aboriginal Archæology,” by Mr. F. D. McCarthy, Dip.Anth.

March 28th.—“The Native Peoples of Sarawak,” by Mr. R. H. Morris, F.R.G.S.

May 16th.—“Aboriginal Physical Types in Arnhem Land,” by Dr. N. W. G. Macintosh, M.B., B.S.

July 25th.—“Magic and Religion in Arnhem Land,” by Mr. Ronald Berndt.

Ten Council meetings were held. The vacancy caused by the resignation from Council of Mr. D. S. Wylie was filled by Miss Jean Craig.

Two numbers of the Society's journal MANKIND were published : Vol. IV, No. 4, in May, and Vol. IV, No. 5, in September. The interstate and overseas subscription and exchange list now totals 64. To publicize MANKIND abroad a printed circular was posted to selected overseas institutions during the latter part of the year. Several incomplete sets were sold, but the prohibitive cost of reproducing back numbers is still preventing Council from fulfilling its orders for complete sets.

The Society's first occasional paper, “Aboriginal Religious Practices,” by Dr. A. Capell, was published during the year and distributed to members and several outside interested bodies.

The Society's annual prize of £2 2s. for the student submitting the best essay in Anthropology III, University of Sydney, was awarded this year to Miss Jennifer Woods, B.A.

N.S.W. Council handed over the administration of the affairs of the Australian Anthropological Association to the Anthropological Society of Queensland for the current biennial period. It is regretted that the affiliated Societies did not reach unanimous agreement on the question of seeking permission to affix the title “Royal” to the Association—a resolution submitted by N.S.W. Council during its term of office.

The draft bill for the Protection and Preservation of Aboriginal Relics submitted to the Premier of New South Wales by Council in 1949 is still under consideration, and Council hopes that before long it will be able to report progress towards the implementation of this legislation.

Council's recommendation that an area of land within the Hawkesbury and Macdonald River and Mangrove Creek region be declared a National Park was submitted to the Minister for Lands some time ago and is still under consideration. We understand that further consideration will be given to the proposal when the District Surveyor's report is received.

Our thanks are extended to Professor Elkin for the use of his own and the Department's rooms for the year's lecture programme, and we also wish to thank the Honorary Auditor, Mr. D. R. Wylie, for his work on the Society's balance sheet and his audit.

Council is pleased with the year's achievements. Its Editor has produced two numbers of MANKIND containing articles of a very high standard on a wide variety of subjects within our field. The lecture programme was planned as a series on the Australian Aborigine, and each lecture was delivered by an acknowledged authority who had carried out original research on his subject. Collectively the series added much that was valuable and interesting to our store of knowledge of our native people. Attendances at all general meetings were good, averaging 40 members and guests. It is a matter of some concern, however, that our net gain in membership during the year was only six. If the Society is to maintain or, as it hopes to, widen its scope of activities, it must be supported by a strong and growing membership.

REVIEW :

The Children of Hari : A Study of the Nimar Balahis in the Central Provinces of India. By *Stephen Fuchs*. Verlag Herold, Vienna, 1950, XVIII, 463 pp., 22 plates.

This is an intensive sociological study, not of an aboriginal tribe, but of a very low untouchable caste of Central India known as the Balahis. The author has lived among these people for over ten years, speaks their language and has come to know them as intimately or perhaps more intimately than any other European observer has come to know either them or any other of the sixty million members of India's depressed classes.

It is indeed surprising that we should have had to wait until the middle of the 20th century for the first adequate scientific account of the culture of such an important section of the Indian people. Mahatma Gandhi realized that the problem of the untouchables was perhaps India's greatest problem but with the exception of Brigg's book on the Chamars and Aiyappan's on the Nayadis of Malabar and this excellent study of the Balahis by Fuchs, social anthropologists working in the Indian field have made no contribution to the solution of the problem at all.

In the opinion of the reviewer, the contribution which they can make is fundamental. Unless and until those who are responsible for the government of India provide themselves with completely factual and detailed studies of the economic, social and religious life of the untouchable castes, they cannot even begin to solve the problem of assimilating these people into the social and political life of the country.

The subjects of this study are among the most unprepossessing specimens of Indian humanity and it is to the credit of the author that out of such material he has created a warm and interesting picture, full of life and meaning and sympathy. It was a forbidding task to even attempt to reproduce the pattern of Balahi life but Stephen Fuchs has succeeded in doing so in this book. It is written in that scholarly, careful style so characteristic of workers trained in Continental schools of anthropology. Although bursting with information, the book is not overladen with unimportant facts as many such treatises are. All in all, it is a good piece of anthropological reporting and we are indebted to Professor Koppers of the University of Vienna for sponsoring its publication and, what is more to the point, its translation into the English language.

F. L. S. BELL.

CORRESPONDENCE, NOTES AND NEWS :

Aboriginal Net Making.

Sir,

In the February, 1950, number of MANKIND, Mr. H. G. Lamond has given a most interesting description of methods of net-making practised by natives of the Diamantina and Cooper Creek. He identifies with the plant *Psoralea badocana* the flax-like fibre used in the making of the nets. This I believe to be an outright mis-identification.

During the 1934 expedition arranged by the Board for Anthropology at the University of Adelaide the true native flax plant was found growing in abundance on the Diamantina, near Pandi Pandi. Its name is *Lavatera plebeja* Sims., sometimes called Australian Hollyhock, a member of the Mallow family. After rain has fallen the *Lavatera* grows in thick luxuriant patches, often appearing lush green—like a field of corn ; its Dieri name is ['wilti]. Among the Dieri, bundles of stems of ['wilti] are retted in water. After about three days the soaked bundles are buried in hot sand and allowed to become half dry, then soaked again. The soaked stems are beaten with sticks. The fibre is then stripped off from each stem, using the finger nails. Working the strippings between the hands removes the epidermis and leaves a strong fibre. This is twisted on their thighs by men to form a two-

stranded string. The fibre is strong, and is made up into both fishing- and emu-trapping nets. The last named may be upward of 55 metres in length, 84 cm. wide and with a mesh of 23 cm. A fine emu net with the above dimensions is in the South Australian Museum ; it came from the Darling River at a date prior to 1859 ; it is believed to have been found lying in a cave. Fish nets from the Frew River are also present, together with stake and hooped bag nets from the Warburton River.

All the original native cords examined from this area, as from all other areas in Australia, are composed of either single- or two-ply twists ; they are never three- or more stranded, as in European cords and strings. It would thus appear from Mr. Lamond's account of the three-stranded string that the white man Coogera Jack, not only locally forced "improvements" in the methods of twine-making, but also introduced among his natives a three-stranded type of European twine.

The making and using of nets evidently was well established among the natives of southern South Australia prior to the coming of Europeans. G. F. Angas (*South Australia Illustrated*, 1847, plate 21) figured a seine fishing net "between 20 and 30 feet in length" in use near Rapid Bay. In the vicinity of this depicted scene N. B. Tindale

and C. P. Mountford (*Records of the South Australian Museum*, 5, 1936) found strips of fishing net used as part of the wrappings of the desiccated body of a woman buried in Kongarati cave. During their excavations nine fragmentary pieces of netting were obtained, with meshes ranging between 1.0 and 2.5 cm.

A hooped net of a mesh of 2.5 cm., called [‘kandaran’ku], was in use by the Tanganekald along the Coorong in South Australia. Recently also it has been noticed that on a rather well preserved skull (A.25351) in the South Australian Museum, from the Coorong, there remains the imprint of a net of this diameter mesh. The skull while still covered with flesh, was supported by such a net and the marks remain as traces on pieces of dried epidermis and as a stain on the bone over the parietal portions of the skull. Another piece of netting made into a bag and with a mesh of 8 cm. was found around the mummy bundle of a child found at Fromm Landing on the Lower Murray River by H. L. Sheard (*Transactions of Royal Society of South Australia*, LI, 1927, pp. 173-176). This bundle had associated with it a single white quartz *pirri* flake. This *pirri* was not found in the grass of the bundle until after the original paper was published; the indication it affords possibly throws back the use of nets to the Pirrian Period in aboriginal culture.

An unpublished description by E. B. Scott, summarized in somewhat abbreviated fashion here, describes the net in use about the year 1841 along the Murray River. It was a bag net, supported on a look of *Polygonum* stem drawn into a U-shape with a string. Its method of use was as follows:

At the spawning season the female Murray codfish entered deep erosion cavities up to six and seven feet deep which lie below water level along the limestone cliffs of the Murray. Male codfish followed to fertilize the eggs. Three natives worked together to catch the fish. Carrying the net they drifted silently downstream to the cliff in a canoe. Each of the cavities was well known to them and might be up to ten or fifteen feet under water. When close to a mark placed above on the cliff, indicating the exact position of the under-water cavity, the leading fisherman and a companion dropped overboard and dived down with the hoop net; the fisherman placed his net before the hole while the companion made a splashing noise or disturbance with his hands. The frightened fish darted out into the net. The net and frame doubled together, and the two rose to the surface, where the third fisherman, in the canoe, speared the quarry.

Scott calls this net *kan de runkoo*, which is similar to the Tanganekald name for their hooped net.

The reference to fibre of *Psoralea* in Lamond's account is of interest since it reminds us that at least one species of this genus, principally perhaps *P. eriantha*, Bentham, yields a short woolly white fibre which is made into a wool-like twist and employed by the Dieri in the making of circular mats [‘kumani], rectangular mats [‘mirimiri], carrying bags, and such ceremonial objects as the [‘kurkipir:a], a large string-figure, like a frame-aerial, worn on the head. Unlike the *Lavatera* fibre, it is not strong enough for use in nets.

NORMAN B. TINDALE.

The Anthropological Society of Victoria

(Founded 1932)

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Mankind 1951-09: Vol 4 Iss
7



IND

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IN QUEENSLAND.
QUEENSLAND.

.....	263
WESTERN AUSTRALIA.	273
.....	274

REVIEWS :

Mythos und Kult bei Naturvölkern. A. E. JENSEN. (<i>A. Capell</i>)	290
Kinship and Marriage among the Nuer. E. E. EVANS-PRITCHARD (<i>Jean L. Craig</i>) ..	291
Kunapipi : A Study of an Australian Aboriginal Religious Cult. R. M. BERNDT. (<i>F. D. McCarthy</i>)	293

CORRESPONDENCE, NOTES AND NEWS :

Cave Paintings in North-Eastern Queens-land. F. D. MCCARTHY	294	Percussion Flaking of Adze Blades. J. R. B. LOVE	297
Stone Arrangements, Western Queens-land. L. J. WINTERBOTHAM	297	Ethnological Studies by W. E. Roth	298
		A Publication Fund Needed. F. D. MCCARTHY	298

PROCEEDINGS OF SOCIETIES :

Annual Report of the Anthropological Society of Queensland, 1951	299
Annual Report of the Anthropological Society of Victoria 1951	301
International Congress of Anthropological and Ethnological Sciences, 1952	302

Published by
THE ANTHROPOLOGICAL SOCIETY OF NEW SOUTH WALES,
C/o. Australian Museum, College St., Sydney,
and
Registered at the G.P.O., Sydney, for transmission by post as a periodical

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MANKIND

OFFICIAL JOURNAL OF THE ANTHROPOLOGICAL SOCIETIES OF AUSTRALIA

Vol. IV, No. 7.

SEPTEMBER, 1951

ORIGINAL ARTICLES :

Australia : Material Culture.

Davidson.

The Thread Cross in Australia.* *By Dr. D. S. Davidson, Professor of Anthropology, University of Washington.*

The term Thread Cross is used to designate a peculiar class of object of widespread appearance in the world. In its simplest form it consists of a structure of two sticks crossed at right angles to which a long string is attached at or near the intersection and tautly drawn from arm to arm, with a half hitch on each, successively and progressively outward until the rhombic area of desired size has been filled.

Special terms are required to designate the more complex foundations which, when similarly strung, support multilateral forms. A structure of three or more sticks crossed at a common point is called a Thread Star. It is suggested that Thread Double Cross be assigned to a foundation in which two sticks more or less parallel and some distance apart are crossed at right angles by a third stick.

Other types of foundation are designed to surround an open space. Thread Rectangle (or Square) seems a satisfactory term for a structure of four sticks arranged so that their central portions enclose a rectangular space, and their eight extensions provide the arms which support the string-work. There also are circular and oval foundations, such as bound coils of fibrous materials with many radiating stick-supports for the strings. These can be called Thread Circles or Thread Ovals. Thread Cross Complex seems suitable for compositions in which two or more structures are arranged in tandem or placed on a large framework. The various types are shown in Figures 1-3.

The many scattered appearances of the Thread Cross in North and South America, Europe, Asia, Indonesia, Micronesia, Polynesia, Melanesia, and Australia present an interesting but baffling problem in historical relationships. The structural forms and the principles of construction are simple. The materials, sticks and string are readily available everywhere. The concentric diamonds decorative effect found in the specimens of many areas is unavoidable if the colour of the working strand is changed at intervals. But strangely enough these objects tend to be associated almost everywhere with festive occasions, religious processions and rituals, initiation ceremonies, or other events of emotional bias. Such contexts do not suggest numerous independent developments. Nor does the limited evidence now available readily lend itself to the conclusion that all of the far-flung occurrences are historically related.

* This paper represents a partial result of field studies conducted in 1930 for the University of Pennsylvania Museum, during 1930-1931 as a Fellow of the Social Science Research Council of New York, and during 1938-1939 under the auspices of the University of Pennsylvania, the American Philosophical Society (Penrose Fund), and the Carnegie Corporation of New York.

But whether the many appearances have only one origin, or more than one, or several, is a problem for the future. The scanty data at hand come principally from ethnological sources, and by their nature are difficult to view in perspective. The flimsy structure of the Thread Cross precludes the finding of archæological specimens in most parts of the world, hence evidence of its prehistory will never be abundant. Yet it cannot be doubted that the Thread Cross enjoys considerable antiquity in many regions and that much light could be shed on the question of relationships between certain regions if knowledge of the derivations of some of the appearances could be obtained.

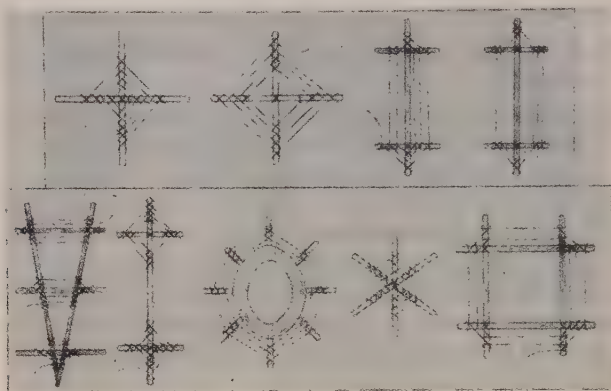


Fig. 1. Types of Thread Cross structure. From left to right—Upper row : Thread Cross, Thread Cross with open centre, Thread Double Cross, Thread Double Cross with open centre. Lower row : Thread Double Cross complex, Thread Crosses in tandem (one with open centre), Thread Oval (headdress), Thread Star, Thread Rectangle (or Square).

Drawings by Marion Duff.

The world-wide aspects of the Thread Cross problem have been pointed out by Foy. Although his treatise was published in 1913, few field-workers have provided new evidence, hence our knowledge is still fragmentary and spotty for every major area. However, his data seem to indicate that the simple Thread Cross is the common denominator in all parts of the world, although there are many differences in details and embellishments. The more elaborate structures and special decorative features appear to be localized in widely separated areas. The question of their classification is confused for, with few examples, it is uncertain whether the slight resemblances or the minor differences should be stressed.

In this paper we are concerned solely with the problem of the Thread Cross in Australia where it occupies a widespread distribution and exhibits a much greater range in form than has been reported for other continents or, in so far as Foy's meagre evidence indicates, in nearby New Guinea and the Sunda Chain. The recent ethnographical literature on Australia contains little information to supplement Foy's summary. The new data presented herein

are therefore primarily from the author's field notes from Western Australia obtained in 1938-1939 from old Aborigines and whites, principally in western and southern localities where Aboriginal culture has long since ceased to function. The evidence, although not rich in detail, establishes the approximate western and south-western limits of distribution and provides important data on the directions of spread and on the processes of diffusion. Presumably it is too late to secure comparable evidence along the eastern frontier, but it still

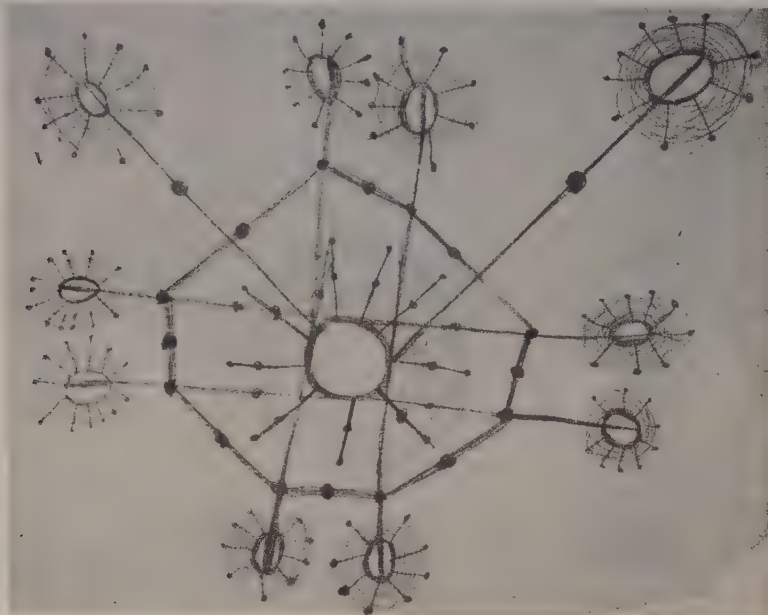


Fig. 2. A drawing of a Thread Oval Complex by an old Aborigine from the north-west at Moore River Reserve, Western Australia, and sent to the author without information on its significance after a visit in 1930. Presumably it does not represent an actual specimen. At least none so elaborate has been reported. It is reproduced as a fanciful example of an ideal in Thread Oval artistry.

should be possible to obtain important information on the history of the Thread Cross in western Central Australia and in north-eastern Western Australia where the present limits of distribution are found.

Although it is strange that more information on such an important ceremonial object as the Thread Cross has not been collected by ethnological field-workers, the paucity of museum specimens is understandable. This class of object is seldom to be seen in the possession of Aborigines except during ceremonies, after which they usually are destroyed or disassembled and the string preserved for future use. Furthermore their flimsy nature,

particularly in the larger examples, makes them difficult to transport without disarrangement of the strings and damage to the secondary decorative features applied to the surface of the string-work. As a result little is known about stylistic variation in any tribe or from tribe to tribe. Thus the distributions of special features which might reveal the important centres of elaboration cannot be indicated.

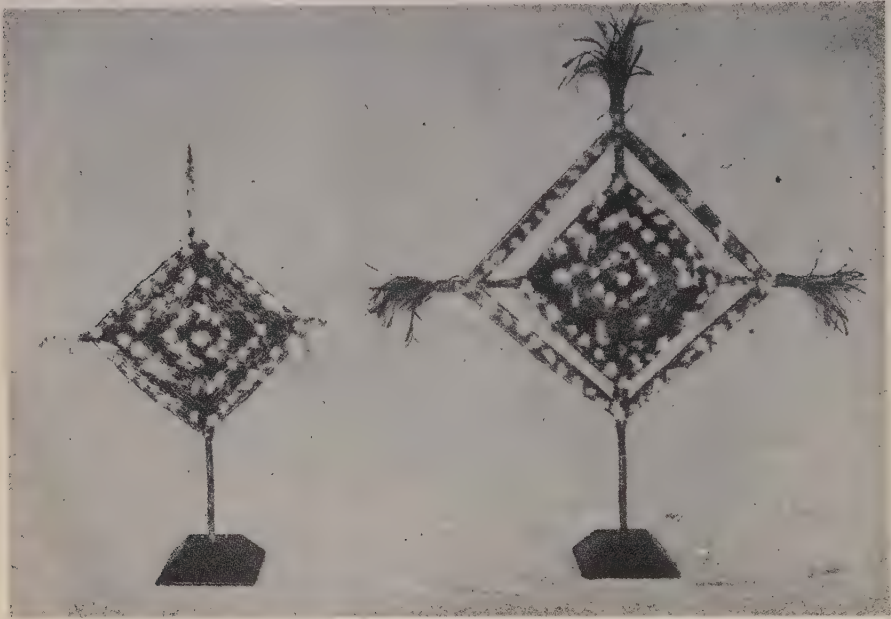


Fig. 3. Examples of Thread Cross artistry. Left: Luritja (Goanna totem). Right: Arunta (Rain totem). South Australian Museum.

AUSTRALIAN FORMS

In Australia the term *wananga* or *wanangi*¹ has become accepted as a general word for Thread Cross regardless of the specific form of the object. It is proposed that it be employed as a generic and collective designation and that the other terms be used for descriptive purposes and classification.

Most *wanings* are impressive artistic creations. String spun from opossum or bandicoot fur or human hair is employed either in natural colour or rubbed with red, yellow, white or

¹ The term *wananga* seems to be typical of southern Central Australia and part of adjacent South Australia. *Wanangi* is used by the Djaru (eastern Kimberley) and is recognized in most of Western Australia, not only by tribes which possess the objects, but by their neighbours who lack them. Since the term is now used by Europeans in the *lingua franca* spoken with aborigines, it is difficult to determine the extent of its aboriginal distribution. Other terms in use include *tjáluda-bàra* (Baiong), *kánbar* (Baiong and Talainji), *púnguna* (Injibandi), *wálaràdi* (Nyamal), *wálaràmbi* (Wanman), *kádawùgul* (Nangumarda), *ràba* (Targudi), *mílangba* (Targari who lack it), *mínmir-ràba* and *mínmir-àdi* (Kandari in Cue area), *yárba* (Bald Hill area, north-east of Peak Hill), *búnderdu*, *ínma* (Bardimaia at Mingenew who lack it).

black pigments to fill the field with concentric rhombuses of different colour. Over such a background masses, bands, or spots of white down often are applied, and feathers of various natural colours may be added, particularly as tufts at the ends of the structural arms.

In many if not most areas each *wananga* is associated with a particular totem, but it has not been determined whether the materials used in construction are limited by totemic considerations. Since the *waningas* of each type are made in the same manner, regardless of totemic affiliation, and all types of *waningas* are made of the same essential materials, it would seem that the fur, down and feathers lose the totemic association of their particular species



Map 1. Distribution of Waningas.

≡ Present. /// Lacking. Blank spaces, no information.
 ← Attested directions of spread of the simple Thread Cross.
 Black Arrow=Attested directions of spread of the Thread
 Oval and complex forms.

once they are converted into raw materials for other purposes. However, as parts of the *wananga* structure they may be given symbolic values consistent with the totemic affiliation of the specimen. For example, in a particular water totem specimen described by Spencer and Gillen,* the red strings represent thunder; the white strings, lightning; uncoloured strings, falling rain. The white patches and bands of down denote clouds. The red colour of the attached feathers represents the dirty brown froth which sometimes floats on flood waters. Thus, as is the case in the incised designs on bullroarers and stone and wooden *churingas*, there is a consistency of motifs over a tremendous area but a variation in their interpretation not only from totem to totem but also from specimen to specimen within each totem.

The distribution of *waningas* is not perfectly known, but can be said to extend in general in a broad band from the north-west diagonally across the continent to western Victoria (see map 1). The northern limit apparently extends from the southern Kimberley district

* Spencer and Gillen, 1899, 308.

to southern central Australia and south-western Queensland. The southern boundary starts near the mouth of the Gascoyne River, seems to curve north-eastward, thence southward to cross the central Lyons and central Gascoyne Rivers, passes southward near and possibly west of Meekatharra, slightly west of Mount Magnet, north of but near Kellerberrin, and eastward to Southern Cross, Coolgardie, near the head of the Great Australian Bight, along the coast of South Australia to the Murray River, and inland to north-western Victoria (Wathi-wathi tribe).²

The eastern limits of distribution have not been accurately defined, either by positive identification or by mention of the areas in which the Thread Cross is lacking, but since these objects are not listed in the literature on central and eastern Victoria, most of New South Wales, and all of Queensland except the Boulia district, it seems hardly likely that they were present but undetected throughout this tremendous region. Incidentally, they are not reported for Tasmania.

However, the situation in central and eastern New South Wales is complicated by the use of such words as *warringooringa* (Clarence River), *warreengahle* (Kamilaroi) and *woongo-weera* (Wiradjuri), for saplings torn from the ground, sheared off, inverted and stuck back in the ground roots uppermost. They are said to have served as seats for medicine-men who exhibited their paraphernalia on important occasions such as initiation ceremonies. Sometimes strips of bark were arranged around the roots. Whether these objects represent the initial attempts to adopt the Thread Cross is uncertain, although Foy³ does not hesitate to consider such a derivation established. Before this conclusion is accepted we should attempt to learn etymologically whether the stem for *wananga* and its variants had a meaning applicable both to stars and objects with projecting arms or points.⁴ Furthermore there is an extensive region between southern central Australia on the one hand and central and north-eastern New South Wales and western Victoria on the other, in which the term *wananga* has not been reported but where other terms have been noted.⁵ Nevertheless, the apparently slight resemblances in the significance of *wanangas* and the root objects do suggest the possibility that the former in some unknown manner have influenced the latter, but more information from northern New South Wales and southern Queensland is required before this puzzling situation can be satisfactorily explained.

The Thread Cross has been reported in Torres Strait,⁶ but in view of its apparent lack throughout north-eastern Australia it is to be presumed that this appearance has been derived from New Guinea and is not directly related to the continental distribution.

² For a general summary of the literature see Foy, 68-75.

³ Foy, 75.

⁴ For instance, Mathews, R. H., *Folklore of the Australian Aborigines*, Sydney, 1899, 26 ff., which is not available for the author's consultation, but is cited by Foy, 75, gives *wareengary* as the word for seven stars in the Clarence and Richmond Rivers area.

⁵ In the Boulia district of south-western Queensland the Thread Cross is called *ta-ka-le* (Roth, 176). In South Australia the Dieri, Urabunna and Eyre Peninsula tribes know it as *piriltja*, *pariltja* and *palyertatta* respectively. The Stirling Report of the Board of Governors of the Public Library, Museum and Art Gallery of South Australia, 1907-1908, 22 (cited by Foy, 71); Spencer and Gillen, 1904, 286; Angas, description for Pl. 5: 2. What appears to be a Thread Double Cross constructed on a spear and called *koonteroo* in southern South Australia is illustrated by Angas, Pl. 24: 3.

⁶ Haddon, II, 34-35.

The situation in central Australia also has some puzzling aspects. For the central and northern portions of the continent *waningas* are denied specifically from the northern boundary of the Arunta to the Gulf of Carpentaria and the Arafura Sea.⁷ The Northern Arunta, however, are the southernmost tribe to possess the peculiar ceremonial objects called *nurtungas* which they use interchangeably with their *waningas*.⁸ The distribution of *nurtungas* has not been defined but includes the Kaitish and Unmatjera to the north and north-west, who lack *waningas*, and apparently extends into the Kimberley district, where objects which seem to be equated with *nurtungas* are present, although they are not necessarily interchangeable with the local *waningas*. Since many important culture traits have spread southward in central Australia, the presently unanswerable question arises whether *waningas* were formerly used north of the Arunta and have been replaced by the southward spread of *nurtungas*.

In Western Australia *waningas* have not been reported for the northern Kimberley district and may be lacking there, but are found south of the Kimberley Range and in Dampierland.⁹ They are denied specifically for the entire western and southern coasts from the Gascoyne River in the north-west to some undesignated point east of Esperance on the southern coast.¹⁰ Their inland boundary, as already noted, apparently runs from the vicinity of the upper Minilya River to west of Mount Magnet, north of Kellerberrin, thence to Southern Cross, Coolgardie and on into South Australia.¹¹

The general distribution as defined can be presumed to be that of the simple Thread Cross. This basic form may be the only type present in some western and southern peripheral areas in Western Australia. At least it was the only type readily identified from photographs by informants in the western and southern marginal locations along both sides of the boundary of distribution. However, since Aboriginal culture has been on the decline in these areas for two to three generations, or longer, the knowledge of many informants was frequently hazy on details. Be that as it may, there is no doubt that the simple Thread Cross was recognized as a form which has been expanding its distribution westward, south-westward and southward until recent times in this part of the continent.

For the Esperance district, according to an old informant residing at Gnowangerup in 1939, the Thread Cross was first seen when he was a young man, presumably in the last decade of the nineteenth century, in the possession of visitors from Coolgardie who had come to perform ceremonies unknown locally.

⁷ Spencer, 210. Spencer and Gillen, 1899, 221; 1904, 339.

⁸ *Nurtungas* are made in a variety of forms. The most common seems to be a column-like structure of from one to twenty spears bound together by hair girdles and usually decorated with eaglehawk feathers and rings of down. A short *nurtunga* may be suspended from the top or affixed to it to form a "T" or a cross. Others may be worn as headdresses.—See Spencer and Gillen, 1899, 627.

⁹ Porteus, 57, specifically describes the simple Thread Cross.

¹⁰ Denials were made by all informants for Carnarvon, Hamelin Pool, Geraldton, Mullewa, Mingenew, Perth, Busselton, Augusta, Albany, Warriup and Esperance, and inland in the south-west to beyond Gnowangerup, Quirading and Kellerberrin. See also Bates, 124.

¹¹ *Waningas* presumably are found further south than the Warburton Range, where they have been noted by Mountford, Pl. 6, E. For Mann and Tomkinson Ranges, north-western South Australia, see Tindale, 211.

The few Aborigines around Kellerberrin recognized the Thread Cross as belonging properly to tribes to their north but were uncertain whether it had been formally introduced to their locality.

In the Murchison district the Bardimaia at Mingenew, whose Aboriginal territory extended almost to Yalgoo, thence eastward to Payne's Find, stated that the Thread Cross belonged to ceremonies of the Aborigines at Mount Magnet which had been moving in their direction but had not yet been authorized for local performance.

In the north-west the evidence consistently indicates a derivation from points to the east. *Waningas* not only have spread via the coast to North-west Cape, thence southward past the Minilya River, and possibly to the lower Gascoyne, but have been coming down such rivers as the Ashburton, Lyons and upper Gascoyne. From the Noala in the Onslow area the Thread Cross reached the Talainji at North-west Cape, who in turn introduced it to the Baiong to their south. Information was not obtained to indicate whether it had reached the Maia on the northern side of the lower Gascoyne, but the Ingarda on the southern bank denied its possession and explained that they did not own the ceremonies with which it is associated. They considered the Noala as the nearest tribe properly authorized to conduct the ritual and thus did not recognize the geographically intermediate tribes to the north as qualified possessors. The Targari, neighbours of the Ingarda on the northern shore of the Gascoyne, just west of the Lyons River, also lack the Thread Cross which they associate with tribes further up the Lyons, presumably the Warienga, possibly the Wajeri. The Jiwali stated that *waningas* reached them from the upper Ashburton River.

The Nangumarda, along the northern coast east of the De Grey River, attribute their possession of the Thread Cross to the Wadji Kuthara, the two mythical culture heroes, and thus think of it as having come from the east.¹²

In the eastern Kimberley district the Djaru, who seem to be near the eastern limit of distribution in this part of the continent, said that the Thread Cross came to them from their southern neighbours.

Thus in the marginal areas of the north-west, the Murchison, and the south-west, the Aborigines who possess the Thread Cross usually have a very definite tradition or knowledge of whence it has come. Their outlying immediate neighbours who still lack it also are familiar with it, and in many cases recognize it as belonging to ceremonies they have not yet been ordained to perform but anticipate receiving in due course. This is an excellent example of the profound respect Australian tribes have for the proper authority to conduct copyrighted ceremonies and to make and use patented sacred objects. Under such conditions the spread of ceremonies may be a very slow process with an informal but quite a complete understanding of context diffusing ahead of formal permission to perform. It seems clear that not only decades but even generations may elapse before some possessors of ritual give their neighbours the proper authority to conduct. It is interesting to note that many Aborigines whose culture has long since been disrupted by European influences nevertheless spoke in the present tense in discussing the spread of ceremonies in their direction, implying that long delays were not unusual nor necessarily the result of European penetration.

¹² For other traits attributed to the Wadji Kuthara, see Davidson, 1949, 94, fn. 20.

The distributions of the other types of *waningas* cannot be indicated accurately. The Thread Double Cross is known to be widespread, being found in South Australia, central Australia,¹³ and in Dampierland, including Sunday Island,¹⁴ and the Murchison district of Western Australia.

The structures built around an open space, such as Thread Rectangles and the simple and complex Thread Ovals used as headdresses, seem to be concentrated in the northern part of Western Australia from near Carnarvon¹⁵ on the west to the De Grey River, Dampierland,¹⁶ and the eastern Kimberley district. Available evidence does not indicate that they have spread from inland. There is great variation in form, but the evidence is insufficient to define varieties or to give specific distributions. Whether they are present south of the upper Gascoyne remains to be determined.

The only specific evidence of the spread of these structures from a direction different from that of *waningas* was provided by the Djaru in the eastern Kimberley area, who stated that these complex forms, called *wúran:gu*, have come to them from the west. They are not prohibited to women as is the Thread Cross derived from southern neighbours.

In the north-west the general direction of spread has been westward, as in the case of the Thread Cross. Knowledge of diffusion southward is lacking. Thread Ovals and their elaborations thus seem to have come from the relatively small region between La Grange and the lower Fitzroy River, an area which suggests the possibility of overseas derivation. But unless it can be demonstrated that these peculiar objects formerly were present in the East Indies a local development from the simple Thread Cross seems a more likely explanation. Possibly they represent the influence of a foreign ceremonial headdress expressed in a Thread Cross technique.

In so far as the basic Thread Cross is concerned it has been noted that in Western Australia it too has spread westward from the La Grange area, as well as westward and southward from the central portions of the State. In South Australia and the western parts of New South Wales and Victoria the directions of diffusion have not been established by testimony, but a derivation from a north-western direction can be inferred from the marginal locations of these areas.

In central Australia the situation is not clear. More information is needed on the distribution and directions of spread of *nurtungas*. They and *waningas* serve similar purposes but their distributions overlap only in southern central Australia and adjacent north-eastern Western Australia. It is possible that *nurtungas* and *waningas* have spread south-eastward from the latter area over parallel routes, *nurtungas* to the north, *waningas* to the south. Such an explanation is plausible and in keeping with distributional evidence, but it cannot be confirmed by the data now at hand. But quite aside from the question of the *nurtungas*

¹³ Spencer and Gillen, 1899, figs. 39, 57; McCarthy, 31, fig. 8, also illustrates unusual Thread Triangles.

¹⁴ Basedow, Pl. 22.

¹⁵ The Thread Square collected by Klaatsch, 792, near Carnarvon presumably was secured from tribes north of the Gascoyne. Ingarda informants denied the possession of *waningas* in general. Since the Baiiong use *waningas*, it is quite possible that their southern neighbours, the Maia, also have them. The Maia live along the north bank of the lower Gascoyne, just across the river from Carnarvon. Possibly Baiiong were visiting in the area at the time of Klaatsch's journey. See Davidson, 1937, fig. 67, g.

¹⁶ Porteus, Pls. 4, 5B.

it is difficult to avoid the conclusion that the Thread Cross has spread westward, south-westward, southward and south-eastward, and in so far as the Djaru are concerned northward, from north-eastern Western Australia. Direct evidence that *waningas* spread from the coastal area between La Grange and Derby to the immediate hinterland is not available, but the distance is not great. This consideration and the scattered appearances of the Thread Cross in the larger islands of the East Indies and the Sunda Islands, as far east as Timor, provide adequate grounds for the conclusion that the Thread Cross has come from overseas, hence has spread southward from the coast.

The most common association of both the Thread Cross and the Thread Double Cross is with initiation ceremonies in south-western Queensland, northern and north-western South Australia, southern central Australia and presumably much of Western Australia. However, in some peripheral districts, such as southern South Australia and apparently in some of the western parts of both New South Wales and Victoria, their employment may have been more generalized, although the evidence is scanty and of uncertain value. In the Adelaide area they seem to have been used in the curing of disease. In addition, in most of the region from central Australia westward into Western Australia, if not in other localities, each specimen has a totemic affiliation, although little information is available on this point.

The initiation rite with which *waningas* are most closely identified is circumcision, but apparently not subincision. The historical significance of this relationship is not clear for the association seems to be marked by no greater fidelity than is to be noted between many other traits in the initiation complex of the continent, such as bullroarers, churingas, and various sacred designs, all of which are associated with circumcision, prominently in some cases, weakly in others, as well as with other initiation rites in the same or other localities.

In the north-west circumcision has been spreading westward in the wake of the Thread Cross and the Thread Oval but in 1939 had not passed the central Fortescue River. Similarly in south central South Australia and the adjacent parts of Victoria and New South Wales the distribution of *waningas* extends eastward for a considerable distance beyond the frontier of circumcision. Furthermore, if the peculiar root objects in central and north-eastern New South Wales are considered to have been inspired by the Thread Cross, *wananga* influences have penetrated several hundred miles beyond the practice of circumcision. On the other hand, the frontiers of circumcision extend far beyond the limits of the Thread Cross in the tremendous central and northern parts of the continent north of the Arunta, for a shorter distance in the northern Kimberley district, and for varying but minor distances in parts of western, south-western and southern Western Australia. In addition circumcision and *waningas* are present in the Adelaide area but are not reported as associated.

Thus the basic relationship between circumcision and the Thread Cross is uncertain. Do they have an old and deep-rooted association on the continent which has been broken in many peripheral areas because one or the other has become detached from its traditional context, as may happen when diffusion takes place rapidly, to spread ahead of its associate and be assigned a new meaning in the adopting area? If so both the companion trait and the traditional context may follow into some localities in the course of time. However, the ability of either trait to detach itself and act independently denies the premise that their original association was very rigid. Or, is the prominent functioning relationship between circumcision and *waningas*, noted in such an extensive centralized distribution, a vogue which

became established in some locality and has been tending to spread into those areas where both are present and to accompany the two into certain new areas when both spread together? Clues on the original context of the Thread Cross in Australia might be forthcoming if evidence of its significance in earlier times in the Sunda Islands could be obtained.

D. S. DAVIDSON.

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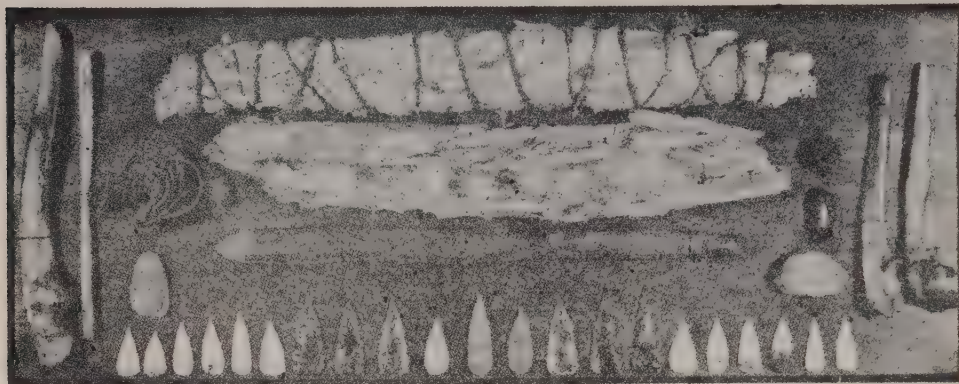
Balfour

A Native Tool Kit from the Kimberley District, Western Australia. By Mr. H. R. Balfour, Vice-President, Anthropological Society of Victoria.

On the 5th June, 1933, I left Melbourne for Perth, where I arrived four days later. On the 16th June I left Perth by steamer for Broome. After spending less than a fortnight in Broome, I managed to obtain a passage by lugger to Pt. George IV. I made the Kunmunya Mission my headquarters from the 13th July to the 3rd August, and during this period I went out camping with the natives and watched them making some of the fine tools which are illustrated in the plate accompanying this article.

When a man of the Worora tribe, Kimberley district, Western Australia, goes hunting, he carries a number of spears. He also has a wallet, called a *bururu*, which he sticks in his hair belt. The wallet is made from the bark of the paper bark tree and is shaped roughly like a cigar. It contains the following articles: a smaller paper bark wallet, lined with bird's down; a small piece of sandstone (*panarum*); a blunt hardwood stick (*karindjalp*); four pointed bones from a kangaroo, including femur (*tjurmba*) and smaller bone (*tizgalja*); a partly made biface point; a number of completed spear points of agate, chalcedony, glass, etc.; a sinew; gum from the bloodwood tree; and string made from the inner bark of the boabab tree.

In making pressure flaked biface points the above articles are used, as follows : (1) the rough piece of agate is flaked by the small piece of sandstone ; (2) the large hardwood stick is used to pressure flake the stone till it roughly resembles a rose leaf ; (3) the large pointed bone is used to pressure flake the stone right back to the centre of the stone on either side ; (4) the small pointed bone is used to pressure flake the saw-like serrations on either side.



During processes (2), (3) and (4) the point is held on a piece of paperbark placed on a large block of sandstone, the paperbark being used to stop the concussion, as a great amount of energy is required to do the flaking. The point is tied to the spear with the sinew and it is also stuck on with gum.

The wallet as illustrated, complete with all its contents, was given to me by a native with whom I had become friendly.

I sent some biface points made by the Worora tribe to the British Museum and the reply came back that they were the most beautiful spear points made by any natives in the world.

H. R. BALFOUR.

Australia : Social Anthropology.

Neville.

The Half-Caste in Australia. By A. O. Neville, Esq., Former Commissioner of Native Affairs for Western Australia.¹

To-night we are to consider briefly the case of that section of our native population generally called half-caste. In Western Australia, half-castes and other mixed bloods of Aboriginal origin except quarter-castes are legally termed "native," while in the rest of Australia they are in law termed Aboriginal, half-caste or half-blood in proportion to their kinship to ourselves.

In point of fact, none being purely Aboriginal, the majority are true half-bloods and the offspring of half-bloods, the balance being those having a proportion of both European, Aboriginal or other mixed blood to a greater or lesser degree, though the near white predominates over the near Aboriginal.

¹ Address delivered before the Anthropological Society of Victoria on April 12th, 1950.

In spite of some Asiatic and Pacific influence, particularly in earlier years, alien infiltration all along has been predominately European, so that to-day we have a people more nearly akin to ourselves than to any other race, not excepting the Aborigines who first supplied the female progenitors of the coloured people we are considering.

In the Northern Territory and all the Australian States except Queensland the infiltration of other than European blood has been negligible—some Asiatic in places like Broome and Darwin—and a little negro influence in the southern States. The former is due to the introduction of Malays, Chinese and other Asiatics into the pearling and mining industries, much of it in pre-Federation days, and the latter owing to the custom of our immigrant forbears in bringing with them negro servants from places at which they touched on the long voyage to Australia by sailing ship. During the recent war the presence of Negro servicemen in Australia has been somewhat detrimental to the stability of the Euro-Australian cross, especially in New South Wales.

For want of a better term, I prefer to designate those we are discussing as the "COLOURED" people of Australia until such time as they become culturally qualified to assume fully our Australian way of life and because, for their protection and control during the process of assimilation, we must have some specific designation for them.

It is to Queensland, however, that we must look for any serious trend towards the creation of a racial mixture other than of the Euro-Australian type.

There the importation, long since discontinued, of Pacific Islanders, mostly of Melanesian stock, to work in the sugar plantations, at first produced a marked effect. But just before the recent war it was estimated that approximately only one-eighth of the total mixed bloods in Queensland were partly Asiatic, Melanesian or Polynesian. By that time the procreation of children by alien fathers other than European had almost ceased, while the majority of children were being born to half-caste, or Aboriginal-half-caste parents.

Thus it is seen that while these former tendencies towards the instability of the cross have diminished and will in a short while disappear, there is an increasing lean towards the European both by choice and design.

A study of Australian history discloses that the people of the Aborigines not of the full-blood have been all along associates of the white man rather than of the black. This association grows closer through the years. The patrilineal affinity has superseded the matrilinear even though fatherhood has so frequently been unacknowledged.

Regarding his white associates as following a superior way of life to that of his Aboriginal kin, the coloured man has clung to the outskirts of the white community, while the Aboriginal has ostracized him because by reason of that very association he cannot exercise power over him. The acceptance of the coloured man into the tribe has not been permitted because, except in the very early years, he has not been subject to the man-making rites imposed by the Aborigines as essential to initiation. The black man's power has progressively declined, while that of the white man has increased. Thus through time the coloured man has lost the useful controlling influence of the moral law of the blacks and has accepted the looser morality of those of the white community with whom it has been his lot mostly to be associated. He has recognized his loss but has regarded it as inevitable.

How we assisted towards the coloured man's ostracism is obvious and scarcely needs stressing. It began with the acquisition of the Aboriginal women by white men and continued through casual employment in the field, pastoral station and home, and in indifferent institutional and Mission training. The imposed application of our way of life upon the coloured man has so far done little to remove his sense of social ostracism, because it has never been either universal or of a high standard. His character has been formed in a hard school under adverse conditions. We have used his physical resources for our own ends, but have neglected his mental powers and cultural training.

We must remember, too, that the history of the coloureds dates back only to the coming of the whites to Australia. They are a people without tradition, lacking culture, spiritual inheritance or guidance of their own.

Through all the years of wonderful expansion in Australia, the coloured people have gone with fear in their eyes and hearts. Their first fears were of the true Aborigines engendered by distorted cultural inhibitions, next, of us and our often brutal methods, and then of one another. Often "knowing fear where no fear was," a sense of inferiority has remained with them all along.

Inheriting some of the passionate excitability and intensity of feeling of the Aborigines, they have been apt to resent the well-intentioned approaches even of their white friends, while ridicule has produced suicidal tendencies.

Most of us know of the physical conditions which encompassed these people for so long and from which so many of them still suffer. These conditions have produced characteristics of indolence, furtiveness, untruthfulness, instability and moral delinquency, traits which disappear in proportion to our attention to their needs, both physical and mental. The half civilized mind needs cultural food of a type we can readily supply to produce the way of life we would wish it to adopt. We are also aware of a contrary picture pointing the way to enlightenment and progress. We have already seen this successfully at work in isolated instances, proving first that our help and encouragement is necessary, and secondly if supplied with goodwill and equity the goal is attainable.

Some centuries of Colonial expansion by European peoples produced racial types now far too numerous and established to be classed as half-breeds, half-castes, mulattos and the like, and many of whom have achieved their "place in the sun."

The intrusion of the British, French and other European peoples into North America, Canada, the Pacific, New Zealand and Australia brought with it the impact of a social system upon the indigenous peoples of those territories which they were unable to withstand or absorb and against which they sometimes fought. This initially almost led to their extinction. But miscegenation and other factors maintained a sort of balance, preventing total extinction and finally helping to turn the scale. This, coupled with a new outlook on the part of the European element since the turn of this century, has resulted in these peoples not only maintaining their status but definitely increasing in numbers. They have increased in proportion to the degree of assistance, instruction and enlightenment the European has been prepared to bestow upon them and their willingness to accept such help.

In their earlier protective legislation, the Parliaments in those States of Australia containing the largest numbers of Aborigines decreed that marriage between an Aboriginal

woman and other than an Aboriginal should be a matter for official consent, a consent then seldom given. At that time nearly all coloureds were deemed legally to be Aborigines.

Since Federation, the legal and actual separation of more and more coloureds from the Aborigines has taken place, necessitating for reasons I need not enter into here the passing within the past two decades of further legislation designed to prevent unauthorized marriages also between coloureds and others taking place. The ethnic effect of such legislation will be appreciated for its stabilizing effect upon the Euro-Australian cross, particularly in those States having the foresight to adopt these provisions.

There are amongst us those who see in this a sinister design to prevent our coloureds choosing partners not of our blood and who resent this in view of the trend of thought towards other peoples in this modern age. These should bear in mind that, excepting ourselves, there are few members of other races available to unite with our coloureds, now present in Australia, and that both upon genetic and economic grounds we should encourage inter-marriage if such be the intention, with ourselves first and others as a last resort—but of course intermarriage between members of their own caste will naturally predominate.

But miscegenation was rife from the earliest days and laws made to check it were mostly ineffective until recent times, when the necessity had lessened as regards the full-bloods. These laws also were strengthened with an eye to their ethnic effect upon the Euro-Australian people, to save young coloureds from the pitfalls and disasters always awaiting them and to ensure the efficient care of the offspring of illicit unions.

At the Canberra Conference upon Aboriginal Welfare in 1937, when I was speaking on the ethnic question with special relation to marriage as it affected coloureds, someone interjected: "You cannot stop them from having babies even if they don't marry." My reply, *inter alia*, was that such did occur as the result of half-castes mingling with whites—but "*that it did not matter very much.*" I have been taken to task by certain religious authorities because of the last few words of that sentence, but I remain unrepentant! Obviously I inferred that the Euro-Australian child, in that case a quarter-caste, that is a three-part-white, was preferable to a three-part-black, since our peoples were destined to be integrated!

Certain increase-promoting causes ought to be mentioned so far as they affect our own coloured people. The first, known as differential fertility, refers here to the ability of cross-bred undernourished parents to produce numerous children. The second is our generous child endowment system, which is having the same effect. The more children born, the better the family is able to live without strenuous exertion! Malnutrition through undernourishment of course disappears in proportion to the social services and employment offering, both freely available to-day.

Whereas in earlier days our attempts at amelioration were purely charitable, spasmodic, very ineffectual and merely designed to succour a supposedly *dying* people, the commendable measures introduced since the turn of the century, and particularly during the past twenty-five years both officially, through religious bodies and interested societies, have been designed to infuse into a *living* people the desire, with our help, to adapt themselves to our way of life.

These factors have enabled our coloureds to partly replace the disappearing full-blood Aboriginal since the beginning of this century and so maintain the average numbers of the people of the Aborigines. There is every likelihood that before the close of this century the coloureds will far outnumber the blacks, whom they are rapidly overtaking.

For the coloureds it has been and still is an uphill fight. The burden of ineptitude is still being carried. They know it, just as we know that while we have accomplished a good deal on their account we have as yet not done nearly enough, and our people generally are only just beginning to wake up to the fact that there is a task to be undertaken. Further, the people of Australia are far from being agreed as to whether the policy of absorption now officially accepted is the correct one, thinking as they do of its effects upon themselves first and the subjects of our consideration last. We shall return to this later.

We now come to the question of how best to stimulate our efforts towards removing the coloured man from his ignominious position in Australia, as well as enlisting the goodwill of our own people.

We still have no national plan, and there are differences in approach, outlook and law as between the States themselves and Federal controlled territory, together with a generally disinterested public. Our coloureds are the same people throughout the mainland of Australia yet separated by State barriers and distinctions, and to me it seems vital that the whole question should be viewed upon a co-ordinated national plane, because that is the first essential to the promotion of the process of orderly integration. Here is a people to be adapted physically and mentally to our way of life, and that on an infinitely higher plane than in the pursuit of the preconceived ideas of the past. True some of these people have emerged into our society without our direct aid, but mainly lacking that fitness so essential to a process which in such circumstances will not bear continued repetition without detriment to the whole mass, and spoil their chance of complete integration while also being capable of destroying the harmony of our relations with them. Haphazard, unguided social contacts do not of themselves supply the elements vital to integration.

Where then are we to look for examples to be followed in this task of integration? We may accept the present-day benign treatment of the Maoris, Polynesians, Indians in America and Canada as exhibiting right trends in raising these people to a position approaching parity with their former oppressors. But I think we must look elsewhere for patterns of conduct to be avoided rather than followed, if we really mean to succeed. We may well shrink from the pitfalls brought about by the age-long idea of racial superiority as exhibited for instance in the case of the Cape coloureds in South Africa and the Negro in the United States of America. We can learn many lessons from the history and position of these peoples to-day, bearing in mind that failure to do so will bring about in due time in Australia exactly the same terrific problems now facing the European peoples in these other countries, problems which are considered practically insoluble. Moreover, the time to face the task is now, when the numbers we have to deal with here are fortunately few and the cost correspondingly small.

THE CAPE COLOURED'S OR EURAFRICANS

The Union of South Africa has a population of nearly twelve million, of whom two million odd are Europeans and nearly a million are what are known as Cape coloureds, the remainder being native Africans and some Asiatics, mainly Indian. But the Cape coloureds nearly all reside in the Cape Province of the Union.

Since the Dutch first settled at the Cape in 1652, just under three hundred years ago, the Europeans of the Cape Province have grown to 870,795 and the coloureds 829,550. But when the British acquired the Cape in 1806 the population comprised only 26,000 whites,

30,000 slaves and some 20,000 Hottentots. It can be seen then that since the first Dutch occupation the mixed peoples of the Cape Province, exclusive of the native African who was a newcomer from the north, have almost run parallel with the European population.

There has been miscegenation in other parts of the Union, mainly between the Bantu people and the Europeans. Of these coloureds there are 60,000 in the Transvaal, and in Natal about half that number, with some in the Orange Free State. Actually the Cape coloureds are a mixture of Dutch, British, imported Negro slaves, Bushmen, Hottentots, Malays and Javanese. In the early years the slaves and the Hottentots predominated as the ancestors of the coloureds. The Hottentots, who with the Bushmen were the indigenous people of the Cape, had light yellow-brown or red-brown skin, peppercorn hair and high cheek bones. They lived in mud huts, kept cattle and sheep, and were ruled by chiefs until incoming whites took their land and displaced them, introduced diseases and gradually killed them off, but some few Hottentots still remain in the western part of the Province. Some few of the Cape coloureds have crossed the colour line and escaped into the white population, and many of the white families also have coloured blood in their veins.

The Cape coloureds seem to be jammed between the Europeans and the native Africans, the tendency being to regard them as natives, and their one great fear is that they too will be segregated when "apartheid" is applied to the Africans. They are steadily being passed out of all the skilled trades and are mostly employed as field and domestic workers though there are some in shops, offices and factories. The official attitude is that these people conform to European habits and mode of living, but their classification with Europeans is a thing of the past and their plight, in Capetown particularly where the majority of them reside, is pitiable. Living conditions are bad and there is much disease amongst them.

As for education, it is only recently that government schools have been established for non-Europeans and some 70% of the coloured population is still illiterate. In earlier days Missionaries supplied some education. Some of these missionaries, mostly foreigners, taught the people to accept their inferior status, while the English missionaries taught the equality of man. The result of this is that many of these people demand equal rights with the whites while others are content to merely press for the improvement of their lot. Coloured teachers must possess a standard VIII certificate and a teacher's certificate obtained after a two years training course. Coloureds may attend the Universities of Capetown, Johannesburg and the University Colleges at Durban and Pietermaritzburg, though they are not welcomed in the social sporting life of the Universities. Non-Europeans, however, are rigidly excluded from the Afrikaans-speaking Universities of Stellenbosch and Pretoria. The subsidy allowed per head for educating a European is £16 odd, but for a non-European less than a third of that.

In 1842 all non-Europeans within the boundaries of Cape Colony were given the same rights before the law as other people. However colour prejudice increased and the position of the Cape coloureds has steadily deteriorated through time. When the Cape was granted a Constitution by Queen Victoria in 1863, coloured persons or Africans, provided they had certain property and salary qualifications, might exercise the franchise.

In 1872 responsible government was granted, and thereafter there was much competition for the native vote. Twenty years later an Act was passed compelling applicants for registration as voters to sign their names in the presence of the registering official, which at once

reduced the number of non-European voters, but it did have the effect of causing the coloureds and natives to endeavour to acquire the ability to write their names.

Upon the creation of the Union of South Africa in 1910 the existing franchise for non-Europeans was retained, but they lost their right to be elected to Parliament. Actually no coloured man had ever been returned to Parliament, but the coloureds used their votes to ensure that those whites whom they considered would best represent them should secure safe seats in Parliament.

So far as the native African is concerned all that has been changed by the Hertzog Acts of 1936, and three European Members now represent the interests of the natives in the Cape Province in the Union Parliament and Senators similarly elected represent their interests in the Senate. The Parliamentary franchise is only exercised by Europeans, except in the Cape Province, where some of the *male* coloured people have a vote.

Marriage between full-blood slaves and whites was prohibited as long ago as 1685, but miscegenation continued.

In 1945 a Bill was introduced into the South African Parliament designed to prohibit marriage between Europeans and non-Europeans. This was intended to implement the Government's policy of racial segregation between black and white in South Africa. Whether it became law or not I do not know, but it appears that under the South African Mixed Marriages Act a European man may not now marry a coloured woman.

There is other legislation which discriminates against the coloureds and weighs them down and their plight, in Capetown especially, where living conditions are bad, is deplorable.

It does seem tragic that after three hundred years these Cape coloureds, who though somewhat improvident possess the characteristics of industry, obedience, respect and willingness to accept their inferior status, should be drawing further and further apart from their European neighbours under a system which relegates them to the underpaid, poverty-stricken and diseased condition in which they now seem to find themselves. There seems to be less hope for them than there is for the Negro in America, with whose case we shall next deal.

THE AMERICAN NEGRO

The position of the Negro in America has been the subject of innumerable books by many types of writers including not a few Negroes. One of the latest books on the subject is "The American Dilemma," by Gunnar Myrdal. This study of the Negro problem and modern democracy has been recently condensed by Arnold Rose, Associate Professor of Sociology in Washington, St. Louis, into a book entitled "The Negro in America." This work more or less epitomises a great deal of what has been said by previous writers, and from reading it one gains a clear picture of the existing position, though it seems to me from the implications contained in it any means of solving the social riddle is still far from clear. The book is copyright and one cannot freely quote it here in consequence, but I do not think I shall be committing a breach of author's etiquette if I refer in an address of this nature to some of the points and statements made in it. In view of the nature of my subject, I hope I may claim so much indulgence, though all that follows is by no means taken from Rose's book.

When America declared her independence of Great Britain she already possessed 600,000 slaves imported from Africa. At the beginning of the nineteenth century the slaves had

increased to 900,000, and though it became a crime to bring slaves into the United States after 1808 the trade still continued until 1862, when it was abolished by the Federal Government under the Presidency of Abraham Lincoln.

To-day the descendants of the original Negro slaves number over 14,000,000, of whom some four-fifths live in the southern American States and one-fifth in the northern States. It is important to remember this because the treatment of the Negro in the north differs from what it is in the south, and those who live in the north, and to a certain extent the west, are actually those who endeavoured to escape from the conditions under which the southern people had suffered for so long.

Now you naturally think of the Negro in Africa as of a definite fixed type, but that is not altogether so because even he presents variations of racial mixture. But in the United States he is really a blend of the three great races, the Negro, Caucasian and Mongolian.

Dr. Herskovits, of the United States North-western University, has estimated that 71% of the Negro American population to-day has some white ancestry. There may be added to this over 27% of American Indian blood. Now so white are many of these Negroes that some 2% of them pass over to the white side yearly, but this does not appear to be completely advantageous in existing social circumstances because of its dangers and the isolation of individuals—moreover it is declining in consequence. This is finely illustrated in a recent film called "Lost Boundaries."

In America many whites possess Indian ancestry, which is not seen as any detriment. In fact some of the best families proudly trace their descent from the Indian girl known as Princess Pocahontas, who married an Englishman named John Rolfe in the early days of settlement in Virginia. But if you have Negro blood in your veins the matter is regarded differently, and such an one is at once classed as a Negro, just as we are now condemning many people who have a little Aboriginal blood in their veins to be classed as Aborigines. The Negroes, although they like to be called Negroes, are in fact mostly Mulattos, and science refers to them as such.

Rose says that the concept of the American Negro is a social concept, not a biological one. That is to say that even considerable changes in the genetic composition of the Negro people is likely to leave social problems unchanged. Certain differences are grossly exaggerated and not checked by scientific research. But the overriding fear seems to be that intermarriage may take place and there is a firm determination on the part of the whites to block amalgamation and to "preserve the purity of the white race."

Another writer, Ethel Alpenfels, says there is no evidence that intermarriage is increasing with the increase in friendliness towards Negroes that has marked parts of American society in recent years, because as fear and insecurity is lifted through economic conditions, so is removed the advantage the minority group might gain through intermarriage. She says further that intermarriage is a red herring drawn across the path of understanding among races. It blocks our thinking on other issues such as housing, employment and education. It keeps us from constructive action.

Rose speaks of the "split in the American personality," the urge for equality of opportunity, fair play and free competition as deeply implanted in the nationally approved social morals of America. Such sentiments are apparently at variance with actuality and the most important bridge between the American creed and actual practice in the economic sphere is

of course racial beliefs such as biological inferiority. All men are equal, but Negroes are not men and are looked upon in the economic sphere as inherently inferior as workers and consumers. The Negro was created to be only a servant or labourer employed for menial, dirty, heavy, badly paid work! From their own achievements we know that to be a totally incorrect picture.

Booker Washington, who wrote "The Story of the Negro" and who was himself "born in slavery," wrote that the Negro was the only race that had been able to look the white man in the face during any long period of years and not only live but multiply. That was written nearly fifty years ago, since when, because of his speedy advance both in material things and culturally, he has certainly justified the claim, but all along he has suffered extraordinarily and he still lives as a race apart, even though he may claim to be a citizen of the United States like any other resident.

From the beginning of their history in the United States of America, and particularly since their emancipation, the story discloses growing discrimination of every kind. This has made the Negroes, particularly in the south, sullen and dissatisfied, but has developed an exclusionist policy combined with a bitter race pride. Because of his treatment he has created a cushion of self-culture and passivity between himself and the white man.

I have said that most of the Negroes live in the southern States, where there is discrimination in every walk of life.

In the north there is discrimination, but it takes a somewhat different form. There the Negroes live in segregated areas, but the whites have no solidarity interest against the Negroes. Direct contact occurs only through leaders, and except for these leaders they see each other as stereotypes.

In the north, for instance, education is open to all children equally but, after finishing school, opportunities are not open to the Negroes, and this breeds segregation.

Although the American Supreme Court has decreed that education must be "equal but separate," it has hitherto discriminated in favour of the whites, the difference being mainly in school grants, teachers' salaries and the teachers are mainly Negroes. The standard of education for Negroes is not equal to the standard for white schools and colleges. Teaching at a lower level has been deliberate, because the whites desire to keep the Negroes ignorant. Of course we know the tremendous amount the Negroes have accomplished towards educating themselves, in establishing schools and colleges, granting subsidies and so on, and a few of the American universities, including Harvard, accept Negro students. But generally speaking in the professions Negro standards are not equal to white standards, and the Negro professional man finds himself only able to practise his profession amongst his own people. Education acquired in this way seems to create distrust between Negroes themselves, that is between upper and lower class Negroes. Too much education is said to meet with suspicion.

All along there have been and are still State compulsory segregation laws. Some of these are designed to prevent the Negro exercising the franchise. Others to prohibit intermarriage with whites. Intermarriage is in fact prohibited by law in all southern States, and also in several of the western States, but even in those States where there is no such law there is in practice little intermarriage because social ostracism becomes intolerable. Even the Negroes ostracize mixed couples.

Nevertheless there is miscegenation, which again is a one-sided matter. The white male may freely associate with the Negro female, but should the male Negro so much as speak to a white woman except on business, he stands a chance of being imprisoned, if not lynched.

In the north some eighteen States have Civil Rights Acts providing penalties against public institutions excluding Negroes, but these laws are evaded.

In the southern living areas, particularly in the big towns, great masses of Negroes live and work in the lowest paid occupations. They are also largely employed in agriculture, but cheap European labour has displaced numbers and unemployment is high.

White-collar jobs are barred because of social considerations. The machine is displacing Negroes because skilled white workers are required to work them, and the Negro has not an opportunity to become a skilled worker. Tradition dictates that he is not capable of handling machines, running a business or learning a profession.

There is segregation in schools, churches, hotels, restaurants, theatres and in any public places where people meet socially. In the case of theatres and other meeting places there are separate entrances for the whites and blacks, and it is just as much a social offence for a white to use a black's entrance as *vice versa*. Coloureds in business houses and stores must use the back stairs or fire escapes. They must use separate lifts. Whites must be served first.

The story is told of a noted Negro singer who, while on tour, managed to obtain entrance to a hotel for whites, but only on condition that she went straight to her room and remained there while in residence.

Then, right through the south, Negro and white dancing together is forbidden, whether a partner be male or female; even in the north it seldom happens. Swimming together is taboo. Then there are degrees of courtesy such as the way in which you address a Negro. You can please yourself whether you call him or her Mr., Mrs., Dr., Professor or Teacher as may be, or merely Jake, Boy, Uncle, Auntie or Nigger, and so on, however cultured he may be, and he seldom gets a courtesy title used by the whites. Shaking hands is a matter of choice on the part of the white. The Negro may not offer his hand unless invited to do so. Then your Negro visitor must enter by your back door, but the white may enter the Negro's home by the front door and even without knocking. He need not remove his hat, neither need he stand up when a Negro woman enters a room, but Negroes must stand in his presence.

Associations for civic, religious, political, economic or merely getting together purposes will not admit Negroes, even the Red Cross Society discriminates against them. In only one direction, that is in music and the arts, do Negroes fare a little better. Of musicians engaged, some 5% are Negroes. Discrimination extends even to those parts of towns occupied by Negroes. The civic authorities spend less on public services, such as garbage clearances, sanitary services, streets and roads in such areas as compared with areas occupied by whites.

Rural hospital facilities are totally inadequate, though out-patients fare better. Penal settlements are on a low level, whites and Negroes being segregated. There are no reformatories for erring Negro youth, who must needs be herded with criminals.

The old Jim Crow Laws are still in operation in the south; that is to say, separate seating accommodation is provided for Negroes in transport vehicles and trains.

I surely need not pursue instances of discrimination further. The fact is that though the Constitution grants equal protection of the law to the Negro and offers him citizenship

through the franchise, laws passed by the States have abrogated all the privileges which the Constitution gave the Negro as an American citizen.

President Truman, like the late President F. D. Roosevelt, has taken up the cudgels on behalf of the Negroes ; the idea being that these preventative legal powers which the States exercise should be arrested and corrected by Federal legislation with a view to placing the Negro in the position in the social scale to which he is, as a free American, entitled.

Many people, of course, agree with this idea because, under pressure, attitudes are undergoing drastic changes. But the mass of American opinion is firmly behind the measures causing discrimination against the Negro. However, the world outlook seems to make a change of heart essential, and although the American trend is to see hope in future relations, it is admitted infinite time is required.

OUR DUTY TO OUR COLOURED

Now let us revert to the consideration of our own problem of coloured relationships. The United States of America and the Union of South Africa have reached a very difficult stage in their race relations after some 300 years of varying contact. We, on the other hand, beginning the task of nation building much later, have been in association with our Aboriginal people for something over half that time, and with their descendants, the coloureds, for a hundred years or less—considerably less since the numbers assumed anything of a problem at all. But having ourselves created a minority problem, are we just to sit back and watch it grow as it has elsewhere until in course of time it too will have become insoluble ? It is for us in this generation to decide that, particularly in the light of current world events.

In north Australia our Aborigines are said to be increasing because improved care is ensuring security. Whether that is so or not, it is of supreme importance that our attitude both to them and to their descendants, our so-called coloureds, should be formalized throughout Australia. We need to agree as a united people whether the coloureds are to go forward with us or revert to a closer association with their full-blood kin on a segregated basis, bringing about in the latter event a condition of affairs approximating social relations in South Africa and the United States of America.

I have no case against the full-bloods. Theirs is, at the moment, a somewhat different problem. They are useful people whose advancement should run on suitable lines comparable with our own.

But looking at the picture as a whole, I believe that those of the coloureds who are now ready for assimilation should be admitted to our social life as equals, enjoying all the privileges and amenities we ourselves enjoy, and that the less fortunate and depressed sections should be encouraged and assisted to the ultimate attainment of that end.

Surely it is not necessary for our coloureds in future to go through the travail experienced in the past by other coloured races as well as themselves ?

Through the years of difficult racial contacts in South Africa, the United States of America and to some extent in Australia, there have been many champions of this and that course designed to improve relationships. These may be considered under three main headings :

- (1) Total segregation.
- (2) The "separate but equal" idea which we call "parity."
- (3) Assimilation or absorption.

I do not think we need spend much time in considering the first. The policy of the present Union of South Africa Government appears to lie in segregation, termed "apartheid." Since this constitutes a political problem of the government of a sister dominion involving nearly nine million natives of various types, I only desire to venture the opinion that segregation, meaning complete separation of the white and black races, in the Union does appear to be utterly impossible, for the same reason as it does in the United States of America and in Australia. In all three countries the coloured and native people are employed in serving white interests to almost as great an extent as they are serving their own, surely making such a course impracticable. In the United States and in Australia total segregation is not considered seriously in these days, and of course in South Africa it may be that it is not contemplated in the case of the coloureds as distinct from the native Africans.

Total segregation was seriously considered for our native people not so many years ago but the idea was abandoned, not only on scientific grounds but also because of the immense cost which would be involved in raising the coloured man to a social plane equivalent to ours without attempting any form of integration between the races. It would have meant putting the clock back and overlooking completely the progress time has brought in the case of the coloured races generally. Had it been adopted there is little doubt that it would not have fulfilled its object, and it would merely have meant sending the native people back to primitive conditions, or at best to the imitation of a way of life followed by ourselves but only partly understood by them—and bear in mind that discrimination results from segregation. It should be apparent, too, that miscegenation and its results effectively dispose of arguments in favour of complete segregation.

The second course, visualizing a "separate but equal" position for all coloured people in our midst, implies raising the coloured man to the social and cultural plane common to all, but again it does not contemplate the integration of the races.

The United States particularly has endeavoured to foster this idea, but so far it has not worked out effectively in either of the three countries with which we are concerned, because it has never been wholeheartedly attempted. On the contrary it has hitherto been ensured by custom, law and discrimination of all kinds that the coloured man, or Negro, shall not enjoy the same social or cultural amenities as the white. Indeed it has been by deliberate action that he has been kept on a lower plane in all things. History has unfortunately declared these people to be subservient races, and modern democracy has so far determined to keep them so.

Is "parity" without integration a possibility here in Australia? I cannot see it so. There must be some crossing from either side, as indeed there is already. As the coloureds improve their status through education assisted necessarily by our efforts, and the gradual adoption of our cultural life, so of necessity there must follow a measure of integration. Education of itself lowers social barriers just as it increases dissatisfaction amongst the coloureds in respect to their inferior position.

Our native peoples have not hitherto learned much of the troubles of similar people in other parts of the world but are beginning to do so now, and it can be credited to them that so far none has turned to incitement of a dangerous kind but there have been stirrings, only needing leaders to fan the flames. It is we whites who have hitherto expressed dissatisfaction with the condition of the coloureds rather than these people themselves.

Let us assume that, say in fifty years time or less, our coloureds attain a culture comparable with our own. What scope would there be for coloured persons with high educational qualifications, except in a limited way amongst their own people?

Surely parity of itself is not enough, and would tend to become unworkable and expensive because of the necessary duplication in almost every walk of life if properly undertaken.

It would not answer here any more than it has answered elsewhere, because of inescapable discrimination, and of course it also implies social segregation.

So we come to the third plan—that is assimilation or absorption.

Now by assimilation is meant the complete social and cultural fusion of the lesser into the greater, therefore tending as the years go by to the ultimate disappearance in this case, of the coloured people. To achieve this objective time is of course needed, because progress will be gradual.

Assimilation might be achieved without parity, but parity is necessary if assimilation is to be successful. For a time, if we do the job properly, there will be two races pursuing a similar way of life living side by side until a common degree of culture is attained. That must be the precedent to real assimilation.

Professor Hoernle of the Pretoria University, writing in his book "South African Native Policy and the Liberal Spirit," says that "if the process of acculturation continues the result will be two races but only one type of culture. The nearer South Africa comes to this result the weaker will be the argument that dominance of white over black is necessary and justified."

Assimilation in relation to the coloured people of the United States of America or the Union of South Africa seems to be out of the question at present, and therefore we need not discuss it in relation to those countries. Here in Australia, however, most thinkers are agreed that it presents the best solution of our problem, and there is yet time to implement it.

It was officially agreed in Canberra in 1937 that the destiny of the coloured people lay in their ultimate absorption by the people of the Commonwealth, and that *all efforts should be directed to that end*.

Since then we have improved our methods in several directions, but if we continue on the existing lines we shall be in danger of creating a difficult position.

The realistic outlook of some few of us to-day is not sufficiently widespread. Though official opinion is becoming more stabilized, assimilation is still regarded as a somewhat vague dream of the future, and efforts towards its attainment in some States are half-hearted. Politically there is now and then some talk on these lines, but when examined it is often found that individually, politicians being more concerned with the interests of their constituents, are not interested enough to consider its implications, or well enough informed to realize what assimilation really means.

Then there are people concerned with the colour aspect, forming by far the largest body of opinion. These are reluctant to accept any change in the status of the coloured people which will bring them into equal association with themselves. These argue, too, that this policy is wrong fundamentally and can never succeed, but they overlook the fact that there is going on all the time under our very eyes absorption of a kind, quite apart from the natural increase amongst the coloureds themselves. There are, too, white families in Australia who, unknown to their younger members, have Aboriginal blood in their veins due to some long past association, not to mention many mixed marriages which have taken place throughout the years of this century.

James Weldon Johnson, the Negro writer, says of the Negro, "He is forced to take his outlook on all things not from the viewpoint of a citizen, or a man, or even a human being, but from the viewpoint of a coloured man, and that all activity must run through the narrow neck of this one funnel." I feel that this truth is very applicable here, particularly as our coloured people for the most part cannot yet even call themselves citizens!

Half measures can only achieve a spurious parity and reform does not move fast enough or reach enough people. Moreover continual frustration creates bitterness, and we may yet witness, if we are not careful, a gradual separation of the coloured people from us in rapidly expanding ethnic groups of a vagrant nature. This has already occurred to a limited extent in certain areas where the coloured people are reverting to the language and customs of their Aboriginal forbears because they find themselves socially unacceptable to the whites, and their growing aspirations denied an outlet.

A growing inferiority complex breeds a type of native claiming independence which is neither welcome to his own people nor to us, but there is a tendency for such a type to fill the picture in these days. This is a form of protest due of course to neglect and indifference on our part, and is likely to continue until we provide something more worth living for in its place.

In the earlier part of this talk I referred to certain anti-social characteristics which were the outcome of indifferent living conditions. These were the result of despair, defeatism and disillusion. But that is not the whole truth. The crossing of the Aboriginal race with ours does not produce a physically decadent human specimen as many suppose. On the contrary under normal living conditions the offspring display a hybrid vigour which is surprising and interesting.

Out of our state institutions and Missions have ventured forth many a fine upstanding lad or girl, physically fit and ready to enter the battle of life and fired with a modest ambition. Yet hundreds of these have returned defeated by social ostracism and lack of further opportunity for advancement. These join their elders who long ago gave up the fight, and are compelled to forget their beneficent recent teaching, to pick up the old ways which they had hoped to abandon for the superior way of life we taught them to expect. There was nothing wrong with these youngsters before our social rejection of them.

We are very rightly proud of our racial antecedents. We know who we are. A wonderful mixture of ancient Briton, Celtic, Angles, Saxon, Danish and Norman peoples. From that mixture has derived a race which has built the world's greatest Commonwealth of Nations. Admittedly we do not quite know who are the Aborigines of Australia, but we do know that early Negroid and Mongolian strains have gone, if they ever existed in them. So long have they been in Australia that they have become a homogeneous type of early man whose origins probably antedated our earliest ancestors though emanating from the same original source.

The Aborigines are a fine type of early survival of whom scientists never fail to speak well and of whom one celebrated anthropologist, Sir Arthur Keith, has said that were he asked to build a new race he would found it on the Aboriginal of Australia. We are privileged to see that process in action, but it depends upon ourselves whether it will be successful.

Here there is no time to discuss the origin of the native Australian, and I have only mentioned this to indicate that they are not the same people as those in America and South Africa that we have previously discussed, though I think the matter of origin has an important

bearing on our problem. The nature of the composite type of our coloured people seems to be such as to simplify the process of assimilation, and so far as we have been able to learn hitherto, any interbreeding taking place between us and our coloureds does not result in any reversion to type, that is to the indigenous aboriginal type.

Cicero once advised his fellow citizens not to obtain slaves from Britain, because they were so stupid and dull that they were not fit to be slaves. Many equally erroneous statements have been made of the Aborigines.

Like the Americans and South Africans, that is the whites, we have branded our natives as incapable of attaining to better things, immoral, lacking intelligence, unhygienic, suffering from disease, odorous, incapable of being educated to any degree, and only fit to perform menial duties. Bald statements such as these which have no scientific basis are apt to be as erroneous as they have been so found in America in the case of the Negroes where science has been applied. But possibly some of these charges are true here as things are at present, particularly on physical grounds, though there have been many exceptions providing a completely contrary picture where we have supplied the usual amenities and opportunities of study available to ourselves.

All the same we do not regard our natives with quite the same antipathy as is displayed towards the coloured masses in some other countries. In fact we rather like them. We do not fear that our natives will suffer a fanatic upsurge, or that they will indulge in sex atrocities, or acquire a collective influence that might become a danger to the rest of the community. Nor do we fear their competition or that they will defeat us in scholarship and take our place in the professional world.

But there is no social equality for our coloureds in Australia to-day any more than there is for Negroes in America and coloureds in Africa. Yet, as I have said, yearly in America some twenty thousand Negroes pass over to the white side and are lost in the community, being regarded as white; so do some coloureds in Africa, and even in Australia. If a few can do it and be accepted, then why not all? It is readily admitted that the merging of the races must begin with those who are nearly akin to ourselves, and it may be that the full-bloods will never reach the same parity, the less so if they are doomed to extinction as is so often asserted.

But discrimination is still paramount. You find few of our native institutions, schools, hospitals or homes run on a basis comparable with our white institutions. Thousands are still homeless campers in squalid bush surroundings. Working conditions and wages generally are not comparable with ours. Industry and white-collar jobs are not available to them, mainly for lack of training, and if they were so fitted it remains to be seen whether they would be allowed to fill them. In the past anything has been good enough for the natives, and we have yet to overcome that feeling.

Except in respect to its own territories governed by ordinance, the Federal Government has no say in the matter of legislation at present, because under the Constitution as it stands it may not pass laws concerning the "People of the Aborigines."

Who are the "People of the Aborigines?" I suggest that the descendants of the Aborigines cannot be deemed to be Aborigines under the Constitution, in fact, though under most State laws they are severally classed as such. But to say that the Federal Government has now no power in the matter, though true, does not mean that it could not easily acquire

that power, because under another section of the Constitution the Commonwealth is able to relieve the States of certain specific matters if requested by the States to do so. Moreover, if it can legally enable Aborigines to exercise the franchise in certain conditions as it has done, can it not make other laws of a like beneficent nature? Who knows but what overriding laws may be very necessary one of these days. Even though the Constitutional position is just the opposite to that in the United States of America, the effect is similar, and akin to the position in the southern States of America where the State laws are even opposed to the spirit of the United States Constitution, which proclaims that all men have equal rights under that Constitution.

A great many of our coloured people are sufficiently advanced to obviate the need in their case for any discrimination in law which at present exists. But if there must be some present discrimination, it should have equal application throughout the Commonwealth. That is exemplified in the position in respect to the franchise which is enjoyed by some of the people of the Aborigines in some States and not in others. In the liquor clauses which permit a coloured man to obtain intoxicating liquor in some States and not in others. In the classing of the coloureds as Aborigines in one State and not in another. In the making of a citizen in one State and not in another. In the failure to make provision for our own standard of education throughout, and in many other ways. Again, though it might not occur to you, a coloured person deemed to be an Aboriginal under State law might with impunity disregard Federal laws and be sacrosanct! For instance a wealthy coloured person could not be taxed!

Our State Native Laws and Ordinances were designed long before Federation was instituted to protect and ensure justice for the Aborigines. The views of many in the early days of settlement in Australia were like the views of those then dealing with the emancipated slave people in other parts of the world, though actual slavery was not practised in Australia. Some of those views were unfortunately handed down to the descendants of our forbears, and it has been very difficult to eradicate them. But through time these protective laws have become discriminatory as regards the coloureds. They were not framed for the most part to ensure progress beyond a perpetual "native" state, and certainly never contemplated assimilation. Revision is needed to rectify the many legal disabilities under which the coloured people still suffer, and I suggest a convention of interested parties should be called to thrash the matter out.

If the right to exercise the franchise confers citizenship upon a person, then few of our coloureds can call themselves citizens, especially as the majority of them are illiterate. A Negro is a "citizen," and proud to call himself an American. He can exercise his right to vote in increasing numbers in spite of the State disabilities, because he is a free citizen by virtue of the Constitution. Our coloureds are not citizens under the Federal Constitution, but are in very truth Australians. Surely it is time they had equal rights with us in that regard.

In spite of all disabilities there is no bitterness and hatred existing between us and our coloureds as there is elsewhere. The one great fear to which I referred just now which has strangled social integration in the United States of America has been the fear of intermarriage. In the Union of South Africa the same feeling exists. Here in Australia there is no law or discrimination against intermarriage, and it remains purely the choice of the parties most concerned.

So far with some exceptions we have declined to associate closely with our coloureds, but it seems evident, as we whites are thinking now, that that phase is closing, and we are ready to extend to them a greater measure of help and interest than ever before.

We, on our part, must get them out of the slums and backwash of our civilization, out of the camps and unsuitable field locations into cultural centres of education and training. We must make the approach.

The coloured people will need to justify themselves by their industry and behaviour, and I suggest that equality of opportunity is more important than social equality in the first instance. They must think of themselves as Australians, not Aborigines.

We must not make the mistake of only elevating the few to our standards and neglecting the many who may be more backward. They truly need our help.

Would James Noble have attained the Ministry without the help of his white friends?

Would Harold Blair, David Uniapon or others who have attained distinction have achieved it without the help of their white friends and supporters?

For one thing the many societies now interested might pool their ideas and collaborate upon a Federal basis to bring cohesion to the mass of valuable data collected. We might even establish a National Association for the Advancement of the Coloured People to back up and inspire official effort. It should include representatives of the coloureds to enable them to express their point of view. Isolation spells delay and disunity encourages perpetual procrastination.

In short we must apply the Golden Rule, especially where youth is concerned, for the youth of to-day will be the mothers and fathers of those who are destined to be even more closely associated with us than they are themselves. If we do this there will, in a comparatively short time, be no need to apply the irksome restrictions at present separating us and we shall begin thinking on an entirely new level, forgetting that we may be socially and severally fraternizing with one who may have some trace of Aboriginal blood in his veins.

In following this precept we have nothing to fear, and nothing to lose, and in the process we may gain much, not only at home but also in the international field.

Let us embark upon this plan indeed and in truth believing that if we carry it out sincerely, honestly and efficiently it will mean the beginning of the end of one of the problems which has bothered Australia for so long.

It has been written, "That there is no race, no colour, no separation, if we choose the path of freedom for mankind."

A. O. NEVILLE.

REVIEWS :

Mythos und Kult bei Naturvölkern. By Ad. E. Jensen. Franz Steiner Verlag, GMBH, Weisbaden, 1951. Pp. 432. Price DM 24.80.

In this clearly written and very interesting work, Dr. Jensen has put forward what can only be called a new theory of the development of religion. He rejects the animistic theory of Tylor, and while he dissociates himself from the thinking of the Vienna School, much of what he believes nevertheless fits rather well into their framework.

His basic doctrine is that the concept of god is older than the concept of the human soul. By this he means one particular sort of god, which he calls a *dema*-god. The term is taken

from the Marind-anim, studied by Wirz in Dutch New Guinea. The Wandjinas of North-west Australia and many other deities come under the heading. The essential thing is that they are primeval beings who formed the features of the earth (though they do not seem to have created it) and the living creatures in it, but now no longer live or function in it themselves. This is because one at least of them was once killed, and as a result they all went to the underworld, death reigns, men are mortal, though descended from the *dema*'s, and the institution of sacrifice came into being, not as a propitiation, but as a commemorative act recalling and re-enacting the primeval scene, and serving as a means of real communion with the *dema* world now. High gods, which mark the cattle-culture, are a separate concept, and polytheism is an amalgam of the two. In some cases there are cross types, as in Mexico, where a *dema* type of god becomes a living, present being. Sacrifice as a propitiation is a degradation of the original form, when the original doctrine was obscured or lost.

The human soul comes from the *dema*'s, who placed them in certain sacred spots, and are also responsible for other types of soul. This is in contrast to Tylor's theory of the development of a soul-doctrine, leading later to a development of a god doctrine. Jensen reverses the two, and has other ways of accounting for ghosts and nature spirits. The essential thing is that the god-concept comes first. He links the Wandjina cults of the Kimberlies with this *dema* doctrine, of which he considers it to be an excellent example, and he finds other examples in South America and elsewhere. While the whole subject is debatable, Jensen has put forward a very good case for further investigation. It is questionable whether his information is sufficiently inclusive to justify so radical a generalization.

The book is well produced, and has a comprehensive bibliography. It is strange, however, to see no Australian writers on Australian religion listed. The journal *Oceanica* is not listed, nor does Professor Elkin's name appear, nor that of any other Australian scholar. Seeing the amount of space that is given to the Wandjina's, this is serious. Jensen has relied entirely on information from Dr. Petri in this regard; he has overlooked, moreover, all other parts of Australia, as though the Wandjina doctrine were typical Australian. These omissions need to be borne in mind as sources of supplementation when the whole thesis is considered, and similar supplementation from other parts of the world may also be needed.

A. CAPELL.

Kinship and Marriage among the Nuer. By E. E. Evans-Pritchard. Clarendon Press, Oxford, 1951, XI, 183 pp., 9 plates.

This is the second volume in which Professor Evans-Pritchard reports the results of field work carried out during the 1930's among the Nuer, a cattle people numbering between 200,000 and 300,000, living in the Nilotic Sudan. The first volume, entitled *The Nuer: A Description of the Modes of Livelihood and Political Institutions of a Nilotic People*, published in 1940, contained a description of oecological relations, and the political, descent and age-set systems. In this complementary study, the author begins by analysing the relationship of kinship to local organization. All members of a Nuer village, which may number several hundred individuals, are kin to one another. The village community consists of an agnatic lineage, which is the unit of political organization, together with persons who have been grafted into the lineage by the processes of tracing descent through females, inclusion of affinal kin and adoption of foreigners. Through marriage prohibitions, the village is virtually

an exogamous unit ; hence both local communities, on the one hand, and lineages, on the other, are complexly inter-related through kinship ties. The classificatory kinship system provides not only the patterns for interpersonal relations, but also assures the highly mobile Nuer of a recognized status in any community he might visit.

In a chapter on marriage, the author describes briefly the pre-marital sexual experience of the Nuer, the period of courtship and the three principal marriage ceremonies : the betrothal, the wedding and the consummation. The process by which a wife is transferred from her own to her husband's people is a slow one, covering several stages, and completed only when, after the weaning of her first child, she finally takes up permanent residence with her husband in his village. Each stage is marked by the payment of bride-wealth, in the form of cattle. After an extended discussion, the author concludes that bridewealth is not a significant factor in maintaining the stability of marriage, its two most important functions being " its role in creating new social ties between persons and of regulating the inter-relations between these persons till such time as their relationships become assimilated to kinship patterns—broadly speaking its role in the kinship system—and its structural role in interlineage relations " (p. 99). In this chapter is also included a discussion of the varieties of domestic union which exist side by side with the usual form of matrimony : ghost-marriage, where a kinsman of a man who has died without male issue takes a wife in the dead man's name ; the somewhat bizarre woman-marriage, where a woman marries another woman, arranges for a male kinsman or some other man to beget children by her wife, and herself becomes the sociological father of these children ; widow-concubinage, where a widow lives with a man to whom she is not legally married and whose children belong to her deceased husband's lineage ; unmarried concubinage, where the woman is not married to any man the father of her children having the right to legitimize his claim to the children by paying cattle to her parents. In all forms of legal marriage, the man to whom a woman is married with cattle is the sociological father of her children, irrespective of physiological paternity. " It is the fertility of the womb which a lineage receives by payment of bridewealth " (p. 122).

Professor Evans-Pritchard proceeds to discuss the complicated patterns of family relationships which arise from these several forms of marriage. Brief descriptions of the division of labour and the status of women are followed by some consideration of the conflicts arising from the dual attraction of the children towards the mother's and the father's kin, and the distinction between full and half-brothers in polygamous households. Further sources of conflict arise out of the opposition between the legal family, and the procreative family.

In the final chapter on kinship, the author restates the main principles of the Nuer kinship system, with further elaboration. The tendencies towards fission and fusion, found between opposed segments in the lineage system in the earlier study, are shown also to characterize the relation of members within the lineage, the relation of the agnatic type of kinship to the type of kinship through women, and the relation of the lineage to the total society. Agnatic kinship ties bind individuals together by common interests, descent, occupation of a common territory and moral obligations. Kinship ties through women are a set of separate personal relationships, characterized by " lack of common group interests and the absence of the jealousies and disharmonies they entail " (p. 176), and integrating the individual into the wider society by a multiplicity of ties. Since the lineage has political

functions, "it may not therefore be too fanciful to suggest that the agnatic type of kin relationships is associated with the autonomy of political segments and their structural opposition to one another—the process of fission, and the non-agnatic type of kin relationships is associated . . . with the wider social system which binds these segments together and contains them—the process of fusion" (p. 177).

Kinship and Marriage is a lucid and readable analysis of the subtle interrelationships of the principles of kinship and locality in the organization of social relations. It is a book for the student of anthropology, not the layman. One can appreciate the care with which Professor Evans-Pritchard has documented the many variations from the ideal patterns of Nuer society; one can only regret, however, that he has not related these variations, nor the processes of fission and fusion in the social structure, to the social change which Nuer society must be involved in, as the result of contact with the west.

JEAN I. CRAIG.

Kunapipi: A Study of an Australian Aboriginal Religious Cult. By Ronald M. Berndt. F. W. Cheshire, Melbourne, 1951, XXXI, 223 pp., 17 pls. £1 19s. 6d. nett.

Kunapipi is the short but intriguing title of an important book which pioneers another aspect of our aboriginal cultures. It is the first book devoted entirely to a description of one ritual cult. This cult, performed in the Northern Territory and Arnhem Land, was mentioned by Spencer in 1914, and the basis of it was recorded by Warner from 1926 to 1929 (*Black Civilization*, 1937). Mr. Berndt, however, in the course of his deep study of this fascinating ritual, witnessed it in various localities, recorded its songs and mythology in the language of the people, and traced its diffusion throughout this vast region. Both he and Professor Elkin believe it to be one of a series of religious cults introduced into Arnhem Land.

Professor Elkin in his introduction explains how this research was planned and carried out. He says that Kunapipi is the story of a ritual danced by the Wawilak sisters in their endeavour to ward off the great ancestral python Yurlunggur who finally swallowed them and their two babies; their spirits lived on and revealed the rituals, including circumcision, to two Dreamtime men. Kunapipi is a Mother-Goddess, referred to as the Old Woman or the Mother, "the source of life in man and nature, both in the Dreamtime or creative past and now. In this activity she was associated with the Rainbow-Serpent, who made the road into the womb for the pre-existent spirits to be incarnated and reincarnated. She was also the very earth itself, that from which living things came and on which they depended for sustenance. This doctrine is expressed in the rituals."

Mr. Berndt gives a summary of the Yirrkalla society, from where the Kunapipi is described, and of their geographical environment, followed by a discussion of the Kunapipi concept, its mythological basis, and its expression through ritual and drawings (many of which are illustrated). Kunapipi dreams are quoted and analysed, and the two long series of sacred and secular songs, 184 in all, quoted in text with translations and remarks form the longest series of aboriginal songs yet published in their ritual context. Throughout this work one is impressed by the way in which Kunapipi penetrates the social, ritual and economic life of the people through their beliefs in pre-existent spirits and birth, ancestral beings, totems, life-giving powers, and dreams, and through their sex life and kinship behaviour patterns, to mention a few—and how in the ritual, these beliefs are reaffirmed, given sanction and life itself is explained.

There is an emphasis upon erotic symbolism, upon sex, throughout the Kunapipi as exemplified in the lay-out of the ceremonial ground, exchange of wives and ceremonial coitus, ritual defloration of girls with the *kalawali* boomerang, in the dances and chants—all of which, however, is expressive of the lives and activities of the mythical personalities concerned, and is equally important to both the men and the women. Kunapipi “highlights the maternal, nourishing, reproductive, and indeed creative principle in nature and man, though not denying the male principle. That is, it associated the cycle of the tropical seasons and the increase of human beings and of natural species, with the concept of Mother—of birth from the womb.”

An important aspect of the Dreamtime concept in Kunapipi is the important part played by ancestral women, and this in turn is illustrated by their being responsible, as the author stresses, for the efficacy of a whole series of ceremonies in the rituals, and it is a part more important than has hitherto been observed. Mr. Berndt agrees with Professor Warner that the coastal Arnhem Land natives are not ignorant of physiological paternity—they link it up in a logical manner with their belief in the pre-existence of spirits. He believes that the survival of Kunapipi and other cults is unlikely because of the impact of the Missions and the Europeanization process. As contact becomes more intensive, he points out, the collapse of aboriginal community life brings disillusionment, loss of faith in accepted doctrines, and consequent maladjustment, while the cult itself becomes corrupted and distorted. One regrets, therefore, that such magnificent ceremonial exhibits as the great Jelmalandji columns, up to 20 feet high, and other material of its kind from various parts of Australia, are not in our museums.

The book is beautifully produced, but it is regrettable to see a valuable map used as an end-paper which will be destroyed when the volume needs rebinding in libraries. I would also offer the suggestion that brown-paper drawings, particularly of ritual subjects, should be restricted to aboriginal colours, otherwise the Europeanization process is being assisted by the investigator.

“Kunapipi” is, as the publishers claim, a landmark in the literature on the Australian aborigines.

F. D. MCCARTHY.

CORRESPONDENCE, NOTES AND NEWS:

Cave Paintings in North-eastern Queensland.

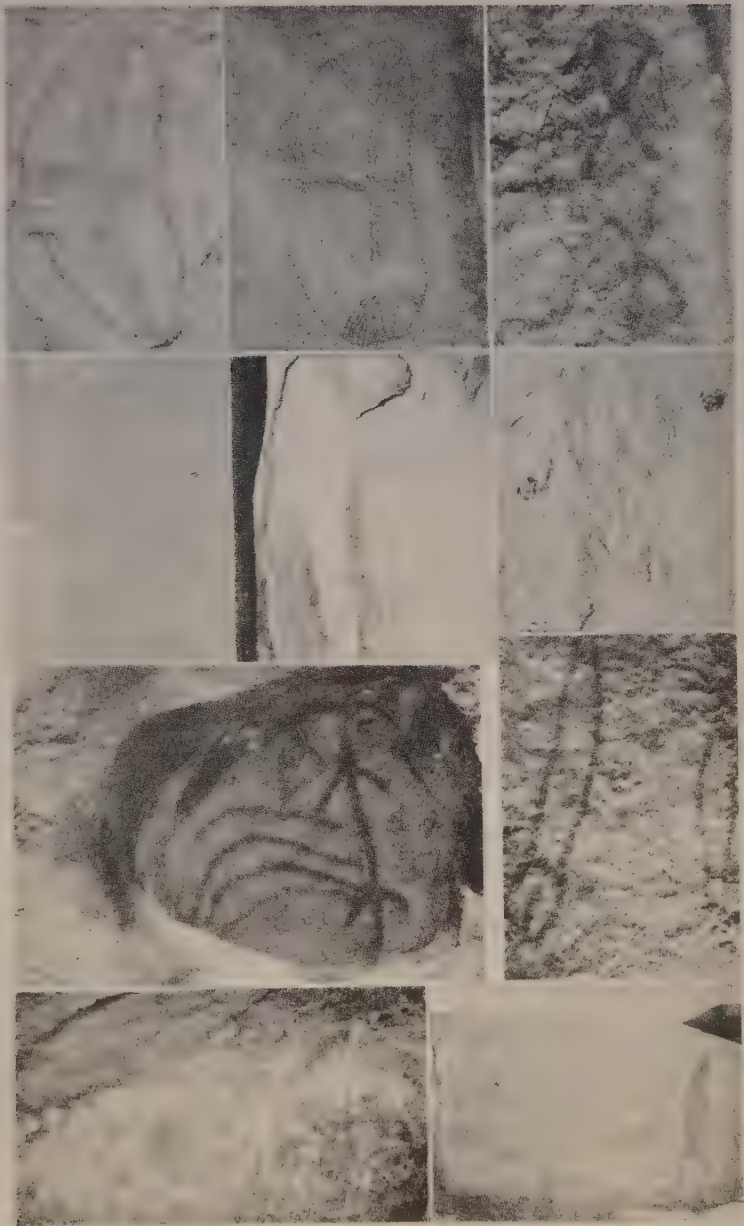
Sir,

Mr. D. G. Sanderson, of Brisbane, kindly sent me the photographs, which he took in 1947, reproduced in Plate P. The cave paintings shown are situated at the southern end of Mt. Elliot National Park, and are about twenty-five miles south of Townsville, Queensland. They are painted in red on the

walls and ceilings of small rock-shelters, and on some exposed rock faces, in a pink granite outcrop on a hillside close to the Ayr-Townsville road. Several distinct types of paintings are represented.

In the top and second rows is shown a series of the large fighting shields used by the natives of this area, made from the root flange of a giant fig tree. The shields bear totemic designs, and illustrate well the

CAVE PAINTINGS IN NORTH-EASTERN QUEENSLAND.



STONE ARRANGEMENTS, WESTERN QUEENSLAND.



Fig. 1



Fig. 2

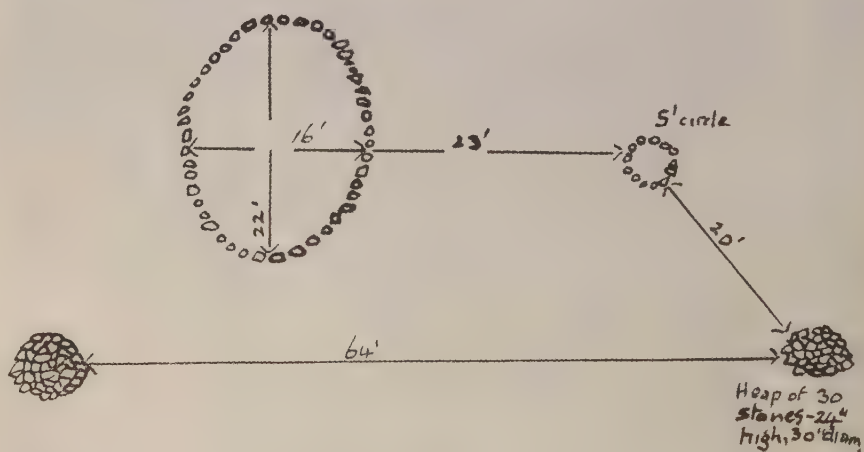


Fig. 3

manner in which local subjects are featured in Australian cave art. In size these paintings are from 10 to 18 inches long, but the actual shields are much larger. One of the photographs (second row, right) depicts a chain-like design.

The photograph on the left of the third row from the top illustrates one of the well-known and widely distributed "stick" men beside two outline boomerangs, and on the right are shown two indeterminate figures.

In the bottom row are shown two faded sets of paintings, on exposed rock faces, in which single-line and outline styles predominate. Boomerangs are perhaps the commonest subject in these two series, but a bird, a man, and other figures may be distinguished.

Mr. Sanderson said that some very old and weathered paintings occur on Mt. Burrumbush, and others are believed to occur on the Cape Cleveland peninsula.

FREDERICK D. MCCARTHY.

Australian Museum,
Sydney.

Stone Arrangements, Western Queensland.

Sir,

Whilst on a recent visit to a property in western Queensland, known as "Cotswold," I showed Mr. Shillicombe, the owner, a photograph of the Kogan stone ceremonial circles (see MANKIND, Vol. IV, p. 68).

He then informed me that there was just such an arrangement on his property and he had often wondered what it was.

The following day we inspected the site and I made a scale drawing of the arrangement (Plate Q, Fig. 3) and took two photographs of it. The second ring was partly covered by a fallen tree, so I did not photograph it, but it was quite definitely part of the arrangement.

"Cotswold" is 30 miles south of Condamine, which is about 50 miles west of Kogan, where the previously described stone circles were found.

L. P. WINTERBOTHAM.

Percussion Flaking of Adze Blades in the Musgrave Ranges.

Sir,

In October, 1945, I had occasion to ask the Rev. J. R. B. Love, who was a great friend of mine, how the Pitjantjatjina natives, inhabiting the Musgrave Ranges, sharpened the stone blades of their adzes. In the belief that his reply may be of interest to readers of your journal, I have pleasure in sending you a copy for publication in MANKIND.

Yours sincerely,

H. R. BALFOUR.

"Your letter of 25th October asking about the flaking of chisel stones:

"I have spent this afternoon on your question.

"To-day I took a man and explained that I wanted to watch him chiselling down a piece of wood and the method of re-sharpening the adze stone.

"(1) We walked round the side of the hill immediately behind the homestead here (Ernabella via Oodnadatta, South Australia) and he picked up sharp-edged bits of stone. These are just as they were found in their natural state. He would pick up a fragment of this white stone and look at it to see if it had a good sharp edge. Some he threw away. Some he declared good *kanti*.

"(2) He got a piece of 'witchetty bush'—acacia—for the handle of the adze; 18 inches or so long, with the curve in it that they like, and enough weight to drive the *kanti* with some force. This stick he barked and chopped one end to a flat termination.

"(3) On this squared end he stuck a lump of *kiti* (spinifex gum), keeping it soft over a

fire of coals, and then inserted one of the *kanti* flakes.

"(4) He pressed the spinifex gum around the sides of the flake, then rubbed saliva over it to help it cool off. (He used saliva during working to prevent the heated gum from sticking to his fingers.) After *half an hour* he declared the gum set hard enough for use and began to adze down a lump of witchetty bush.

"(5) After a few good heavy blows he broke a flake from the edge of the *kanti*. He worked on until several more flakes broke off and the adze was *too blunt for further use*.

"(6) He now took a piece of hard mulga wood, laid the *kurdinma* (adze), with the head lying flat, on the palm of his hand, and tapped the back of the stone adze flake till he knocked a chip from it. Looking along the edge he tapped again and repeated the process till he pronounced the cutting edge fit for work again.

"This tapping with a piece of wood is the normal procedure here to sharpen up the *kanti* as it gets blunted. I have described it in detail.

"The people here do not go through the methods of percussion first, then pressure flaking as do the Worora tribe, in the Kimberley district. *Percussion flaking* is the only method of sharpening. The motion of the hands in percussion is different from the Worora. Difficult to describe. As I have said above, the man taps the back of the flake with a motion towards the edge. The Worora, in the initial, percussion stage, strike rather *away from the edge* and towards the hand holding the stone.

"Summed up, the stone adze of the Musgrave Ranges is a natural flake, as it is picked up from the ground.

"To the suggestion that the tool is self-sharpening the answer is 'No.' The edge is flaked for further use when too much blunted by the breaking off of flakes.

"Two methods or uses of adze stone pertain here: (1) The *kurdinma* or adze for doing heavy chopping. (2) The stone flake in the handle of the spear-thrower, for shaving down spears and cutting up meat. This is not subjected to such heavy work, but is sharpened in the same way as the adze."

J. R. B. LOVE.

Ethnological Studies by Walter E. Roth.

A set of Roth's Bulletins on North Queensland Ethnography has been presented by Dr. A. Hamlyn-Harris, former Director of the Queensland Museum, to Queensland University Museum of Ethnology. The set is of unusual interest because it was Roth's personal one and contains numerous corrections and additions in his handwriting. At present this set is in the keeping of the Mitchell Library, where it will remain until a chair or lectureship in Anthropology is established at the Queensland University. Those interested in Queensland ethnology may consult the set at the Mitchell Library.

A Publication Fund Needed.

Sir,

An impressive mass of information has been recorded in Australia and New Guinea during the past two decades by anthropological research workers from the Australian National Research Council, the museums, and from institutions abroad. This invaluable field work, it is essential to note, is now a permanent feature of Australian scientific work. The material recorded and collected relates to various aspects of the native cultures—social organization, linguistics, religion, mythology, economics, music and songs, cave paintings, rock engravings, decorative art, material culture, archaeology, physical anthropology and culture-contact problems.

The need is an urgent one for such research work to be carried out, but there is just as urgent a need for its results to be published. Many of the reports on even specialized aspects of these native cultures are long and costly to publish, particularly where there are texts in the native language or many illustrations of art, material culture, or ceremonies, and with the high printing costs of the present time to be considered it is possible that a great deal of the recorded data might never be published. This would be most unfortunate for both the field worker and the science of anthropology generally.

In the United States of America the Wenner-Gren Foundation for Anthropological Research (previously known as the Viking Fund) was established by Mr. Wenner-Gren, who has stated that the concepts of culture and cultural relations developed by anthropologists offer a unique opportunity for furthering understanding and co-operation among nations and their peoples, because

basic to the finding of a common approach to human problems is the awareness and appreciation of divergent cultural traditions and social organizations and their validity within their own cultural environments. The results of this Foundation's work are most impressive in field work and publications.

We need a similar fund in Australia to provide at least for the publication of one anthropological monograph or memoir each year. A principal of five thousand pounds (£5,000) would yield enough interest, together with the returns from sales of publications, to achieve this aim. A wealthy person interested in anthropology, could make a magnificent gift to science by donating such a sum to the Australian Anthropological Association for this specific purpose. It would be a tremendous encouragement to field workers and something of which Australian science in general would be very proud.

F. D. MCCARTHY.

PROCEEDINGS OF SOCIETIES :

Annual Report of the Anthropological Society of Queensland, 1951. *Summary of the report delivered at the Annual Meeting of the Society, 21st September, 1951.*

The Council has pleasure in submitting to members the Third Annual Report of the Society for the year ended 31st August, 1951.

This has been rather an eventful year as, for the first time, it fell to the lot of the Council of this Society to assist in preparations for the Science Congress and to organize the programme for Section F—Anthropology, and members had the opportunity of attending the Congress itself. In addition to ordinary meetings, two visits to sites of anthropological interest were arranged for members.

During the year seven ordinary meetings were held, when the following papers and addresses were given :

1. Second Presidential Address by Professor Wilkinson : " The Natives of the Pacific Islands, with special reference to the Polynesians."
2. " Bora Rings and Their Preservation," by Associate Professor F. W. Robinson.
3. " Ancient Geography," by Dr. Arthur Wade.
4. " The Cherbourg Aboriginal Settlement," by P. J. Richards, Esq.

5. Report on a visit to Mt. Byron to inspect a supposed "dolmen," local bora rings, etc., by Dr. L. P. Winterbotham.
6. "Megaliths (including Dolmens) and their Distribution in Various Parts of the World," by Professor H. J. Wilkinson.
7. "Materials Used by Early Man," by Mr. F. S. Colliver.
8. "Pottery and Anthropology," by Dr. G. Kenny.
9. "Medicine and Surgery among the Australian Aborigines," by Dr. L. P. Winterbotham.

In addition, the following visits were made :

1. On 1st May, 1951, to Keperra Country Golf Club, Enoggera, to inspect a large bora ring, carved trees, etc.
2. On 12th May, 1951, to Rathdowney. A party of members organized by Associate Professor Robinson, and armed with scythes, hoes, etc., went down to help a local group to clear a large bora ring in preparation for a visit from the Science Congress a fortnight later. The ring is situated in the Memorial Park in the centre of Rathdowney, on land given by Mr. Tilley, and it is the intention of the Park Committee to keep it permanently in order. The Society provided the local group with information (prepared by Professor Robinson) concerning bora rings and their significance, and with an inscription suitable for erection at the ring. A great deal of local interest was aroused in regard to aboriginal history and the preservation of native cultural sites, weapons and other objects.

At the end of December, 1950, Professor Wilkinson and Dr. Winterbotham visited the Somerset Dam district to inspect local bora rings and other aboriginal relics, and particularly a supposed "dolmen" and Diana's Pool at Mt. Byron. An account of this trip was reported to the Society on 14th March, and exhibits and photographs were shown.

During the year, on several occasions, recent additions to the Ethnological Museum of the University of Queensland were shown by the Hon. Curator, Dr. Winterbotham.

Members will be interested to hear that the Ethnological Museum was established at the new University at St. Lucia in time for the Science Congress, and attracted considerable attention. Visitors from other States commented very favourably on what they saw.

At the Science Congress held here in Brisbane this year the meetings of Section F—Anthropology were well attended and some interesting papers were read. The next Congress is to be held in Sydney in August, 1952.

One of our country members, Mr. Seaton of Cairns, who was unable to come down for the Congress, sent several reproductions of aboriginal drawings which he discovered in caves some miles out of Cairns. These were very favourably commented on by the visiting anthropologists, especially Mr. McCarthy of the Australian Museum in Sydney.

We regret to record that during the year we lost by death four of our members : Dr. Wade, Rev. Hedley Abbott, Rev. Brown and R. S. Rankin, Esq. All were foundation members of the Society and regularly attended our meetings. The late Dr. Arthur Wade was co-opted as a member of the Council soon after the foundation of the Society and held office as a Councillor right up to the time of his death. Dr. Wade regularly attended both Council and ordinary meetings, and made several contributions, including addresses on "New Guinea" and "Ancient Geography." During the year Dr. Wade acted as Hon. Secretary

of the local committee of Section F—Anthropology of A.N.Z.A.A.S., and did a splendid job. Proper acknowledgement of his contribution towards the success of the Congress was made by representatives of the Australian Anthropological Association at a meeting at the conclusion of the Congress. His sudden departure from our midst just before the Congress came as a great shock to his many friends and removes from our Society one of its most esteemed and distinguished members.

At the last meeting of the Council consideration was given to the supplying of country members with fuller notes of the Proceedings, and where possible, copies of addresses given. It is hoped that a start will be made in the coming year to provide this service.

Annual Report of the Anthropological Society of Victoria, 1951. *Summary of the report delivered at the Annual Meeting of the Society, 8th August, 1951.*

The Council has much pleasure in submitting to members the Seventeenth Annual Report for the year ended 31st August, 1951.

Seven general meetings were held at the B.M.A. Hall, Albert Street, East Melbourne, at which the following lectures were delivered :

1951 :

February 14th.—“ The Korean Scene,” by Howard Young.

March 14th.—“ The Sudan through the Eyes of a Medico,” by Dr. C. E. G. Beveridge, M.A., B.Sc.

April 19th.—“ The Arnhem Land Scientific Expedition,” by C. P. Mountford. Illustrated by films.

May 9th.—“ The Pyramids of Egypt and Central America,” by E. B. Walton.

June 13th.—“ The Recent History of Anthropology,” by D. J. Tugby, B.Sc.

July 11th.—“ The Aboriginal Battle Caves of the Clarence River, N.S.W.”, by Rev. D. Rettick.

August 8th.—“ The Assimilation of New Australians,” by Professor A. Lodewyckx.

It will be noted that of the above lectures more than half deal with anthropological fields of interest outside Australia and the Pacific. Council felt that, although the principal aim of the Society is to increase our knowledge of the native peoples of Australia and the Pacific, it also exists to promote the science of anthropology in general.

The above lectures were well attended despite restrictions on lighting and travel due to a more than usual number of power failures during the year.

The esteemed Honorary Secretary of the Society, Mr. R. C. Seeger, is at present furthering his knowledge of our aboriginal people by making a first-hand study of those who dwell along the coast of Arnhem Land, and we look forward with pleasure to his reports when he returns to Melbourne.

The Society is continuing its good work in the cause of anthropology in the State of Victoria, and there is every reason to hope that 1952 will see it increasing in strength and effectiveness under the able leadership of our new President, Mr. Donald J. Tugby, B.Sc.

INTERNATIONAL CONGRESS OF ANTHROPOLOGICAL AND ETHNOLOGICAL SCIENCES, 1952.

At the third session of the Congress, held in Brussels in August, 1948, it was decided that the next Congress should be held in Vienna. Accordingly, the fourth Congress will assemble there from September 1st to 8th, 1952.

The Austrian Government and the scientific institutions and societies in Vienna have guaranteed full support and collaboration.

The Austrian Executive Committee has been constituted as follows :

President : Rev. Father Professor Wilhelm Schmidt, Anthropol. Institute.

Vice-President : Professor Robert Heine-Geldern, Vienna University.

Secretaries : Professors Wilhelm Koppers and Josef Weninger, Vienna University.

Assistant Secretary : Dr. Anna Hohenwart-Gerlachstein.

Treasurer : Dr. Walter Graf.

Please address all correspondence to the Secretary, Wilhelm Koppers, Institut für Völkerkunde, Neue Hofburg, Corps de Logis, Vienna I., Austria.

The membership fee is Austrian schillings 200 or \$8. It covers various scientific tours and social functions. All members will receive a copy of the Proceedings. A member may register up to two members of his family as associates. The fee for Associate membership will be Austrian schillings 100 or \$4. They may attend the meetings, excursions and receptions, but may not speak or vote, and they will not receive the Proceedings.

Members who intend to submit papers may from now on send in the titles to the Secretary. Except in special cases, the time allotted to every paper will be twenty minutes, plus another ten minutes for discussion. Members should inform us whether they will require a projector and indicate the size of their slides or films.

Apart from anthropological and ethnological subjects in the strict sense, papers may deal with questions of applied ethnology, demography, sociology, psychology (as referring to ethnological problems), science of religion, linguistics, folklore, prehistory, palaeo-ethnology, origin and distribution of cultivated plants and domesticated animals.

The Austrian Committee cordially invites anthropologists, ethnologists, sociologists, folklorists, linguists, prehistorians and archaeologists of all nations to attend the 4th International Congress of Anthropological and Ethnological Sciences in Vienna. It will do its utmost to make this Congress, from both the scientific and social point of view, worthy of the previous sessions, in London (1934), Copenhagen (1938) and Brussels (1948).

On behalf of the Officers
of the Permanent Council :

SIR JOHN L. MYRES, H. J. FLEURE,
KAJ BIRKET-SMITH, FRANS M. OLBRECHTS.

On behalf of the Austrian
Executive Committee :

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GELDERN, WILHELM KOPPERS,
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(Founded 1932)

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Meetings are held in the B.M.A. Hall, Albert Street, Melbourne on Wednesday evenings as advertised, at 8 p.m., at regular intervals. Annual subscription (including free supply of MANKIND), 10/-.

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(Founded 1948)

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OBJECTS.

- (a) To promote the science of Anthropology.
- (b) To hold bienrial conferences of delegates from affiliated societies to deal with matters affecting affiliated societies generally, or the science of anthropology.
- (c) To take public and official action in the interests of anthropology, as may be deemed desirable.
- (d) To encourage affiliated societies to co-operate in every possible way.

The Anthropological Society of N.S.W. as such is not responsible for any opinion or declaration published in this magazine, by whomsoever expressed, unless specifically stated to be so by the Editor.

All communications, MSS., and proposed advertisements to be addressed to Mr. F. L. S. Bell, M.A., Editor, City of Sydney Public Library, George Street, Sydney.

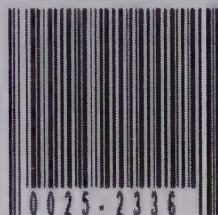
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8

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INIUM.

THE CORONA CRANIUM. FRANK W. G. MACINTOSH	307
BLOOD GROUPS AND THE POLYNESIANS. DR. J. J. GRAYDON	329
ABORIGINAL IMPLEMENTS FROM CAMP SITES IN THE SOUTH OF SOUTH AUSTRALIA AND VICTORIA. DR. T. D. CAMPBELL AND MISS G. D. WALSH	339

REVIEWS :

South Pacific Commission, Project S.10, Report No. 1. FELIX M. KESING. (F. D. McCarthy)	342
Lamet: Hill Peasants in French Indo-China. K. G. DIKOWITZ (F. D. McCarthy)	34

CORRESPONDENCE, NOTES AND NEWS :

Rock Paintings near Glen Isla, Victoria. L. ADAM	343	Sir Wm. Dixon Collection, Australian Museum	346
Pecked-marked Carvings and Sign Talk. W. E. HARVEY	345	Anthropological Society of Victoria, 1952 Syllabus	346

Published by
THE ANTHROPOLOGICAL SOCIETY OF NEW SOUTH WALES.
C/o: Australian Museum, College St., Sydney.

and
Registered at the G.P.O., Sydney, for transmission by post as a periodical.

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(Founded 1928)

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MANKIND

OFFICIAL JOURNAL OF THE ANTHROPOLOGICAL SOCIETIES OF AUSTRALIA

Vol. IV, No. 8.

MARCH, 1952

ORIGINAL ARTICLES:

Australia : Physical Anthropology.

Macintosh.

The Cohuna Cranium : History and Commentary from November, 1925 to November, 1951.¹
By N. W. G. Macintosh, M.B., B.S., Dip. Anthropol., Reader in Anatomy, University of Sydney.

Anyone wishing to read a description of the Cohuna cranium must go to the daily press of the late 1920's and early 1930's, for no full description of it has ever appeared in scientific literature.

The cranium has passed through the hands of a succession of workers, each of whom intended making a description of it available to the scientific world, to the expressed approval and satisfaction of various authorities that this overdue task was about to be accomplished.

In a blast of press controversy, the cranium rocketed to fame in a brief period and was publicized as of brutal form and vast antiquity ; but subsequently faded from the scene almost completely, being relegated to the class of anthropological bric-a-brac.

Curious too is the fact that, while disputing claims for its antiquity, the majority of scientific observers have been impressed on making its first acquaintance.

To write the story of Cohuna one must have recourse to a voluminous file of correspondence, the property of the Institute of Anatomy at Canberra, and the press reports from 13/11/25 to 9 12/31. The references, as far as it has been possible to trace them, are set out in chronological order. The list is long and tedious ; but it is included because it represents a completed investigation, and makes a future search unnecessary.

Mr. George Terry, proprietor and editor, published in the *Cohuna Farmer's Weekly* of 13/11/25 the first description of the "Cohuna skull" and the circumstances of its finding, and suggested that the "skull" would result in a focussing of anthropological thought on the Murray Valley region. Whatever the final decision about the cranium may be, Terry was the first to recognize its possible importance and credit is due to him accordingly.

DISCOVERY

Mr. George A. Gray, contractor, of Cohuna, in November 1925, while ploughing, preparatory to excavating an irrigation channel on Councillor T. Opie's paddock, lot No. 17, adjacent to the northern edge of Kow Swamp, found the plough halted two feet from the surface by a mineralized cranium filled with silt.

Close by an unmineralized female skull was unearthed at a depth of 3 ft. 6 ins. Two chains away portions of a number of skeletons said to represent 11 individuals, were unearthed at depths between 3 ft. 6 ins. and 5 ft.

¹ Delivered as the Presidential Address to the Anthropological Society of N.S.W., 27th November, 1951.

This new irrigation channel measured 5 ft. in depth, with widths of 26 ft. at the surface and 8 ft. at the bottom. Gray said the channel contained no other bones. Sir Colin MacKenzie and Mr. D. J. Mahony have repeated this statement in print. This statement does not coincide with the findings of the Sydney University party which examined the site on 3/1/40 (*vide infra*).

Gray took the two "skulls" to his home, where cracking of the anterior vault of the first was said to have occurred.

They were then taken to Senior Constable Grant at the police station at Cohuna, and there they were seen by Terry.

The skeleton of a modern female aborigine is said to have been unearthed on 9/3/26 at almost the same spot as the Cohuna cranium. This is presumably the one mentioned by Mahony (1936) as having been dug up by "MacKenzie himself . . . at about the same depth" (3 ft. 6 ins. to 5 ft.).

Observing Terry's press contributions, Professor MacKenzie, at that time Director of the National Museum of Australian Zoology in Melbourne, went to Cohuna and secured the cranium.

Gray subsequently claimed compensation for his property—"the valuable skull." His letter and a receipt for £15 which MacKenzie gave him are preserved at Canberra.

It subsequently became, and remains, the property of the Institute of Anatomy at Canberra.

LOCALITY

According to a report by E. J. Dunn, Murchison Medallist and formerly Government Geologist, Victoria, Cohuna township is 10 miles south of the Murray River on Gunbower Creek, a branch of the Murray, and 185 miles slightly west of north from Melbourne.

The cranium was found eight miles south 20° east from Cohuna, north-north-west of Kow Swamp and close to its outlet into Box Creek. Lat. 35° 57' S., long. 144° 18' E.

GEOLOGY (*Dunn's report abstracted*).

The topmost material of the plain at the skull site is light tawny coloured silt laid down in sea water, and of late Tertiary age, consisting of fine silica with just enough binding clay to form hard lumps when dry. Little alteration either by deposition or denudation has occurred since the plain was uplifted, except for a thin film of blown red fine sand of recent age, one foot thick at the site, elsewhere only a few inches thick, or rising in ridges.

"There is no evidence to show whether the skull was buried, left on the surface and gradually embedded, or distributed by water or other means." (Dunn.)

It is possible, but not probable, that high floods of the Murray would reach the site, the trend being to the north.

Kow Swamp is a shallow depression 7 ft. below surface level, which is filled at flood times by channels from the Murray.

PHYSICAL FEATURES (*also from Dunn*).

The plain is not dead level, there being a down trend to the north, towards the Murray, of about one foot per mile, and to the west, of about eight inches to the mile. This trend continues on north of the Murray.

Formerly the area occupied by the Murray Plain was an estuary into which the abbreviated Murray, Murrumbidgee and Darling Rivers emptied silt from a wide area.

Uplift of the country occurred in Late Tertiary time or later and the silt deposit became dry land. The site of the skull is about 270 ft. above sea level.

About 125 miles south of Cohuna is the region of maximum uplift—"The Divide"—1841 ft. above sea level, and the plain commences about 45 miles south of Cohuna. (Dunn.)

"Owing to the peculiarly fine, fattening quality of its natural pastures, it [the Cohuna district] is able, with the aid of irrigation water, to carry a much larger number of fat stock than" other adjacent regions. (*The Argus*, 14/11/25.)

THE "SKULL"

Dunn's account of the cranium (unpublished) is here quoted in full.

"One of the first impressions of this skull is its remarkably well preserved condition. The surface of the skull is rough—owing to a film composed of silt and calcium carbonate—and not smooth as in skulls of more recent date. On the back of the skull a thicker incrustation of carbonate of lime has formed. It is worthy of note in connection with the question of geological antiquity that in no instance had a mineral incrusting layer formed on any portion of the recent aboriginal remains found." (Dunn gives no indication of how he arrives at a classification of "recent aboriginal" remains apart from the incrustation itself.)

"Silt somewhat darker in colour than the general mass and less coherent filled the cranial cavity.

"The skull is now completely mineralized. It is stone, and when tapped by a fragment of skull similarly mineralized, emits the 'clink' characteristic of stone. It has lain so long in the silt that complete replacement of the osseous material has resulted, and there is apparently no trace left of animal matter. This contrasts with other skulls of the 'recent' blacks buried in the same material, for they show no traces of such alteration. In the silt where the skull was found calcareous concretions form, and in some instances until tested were mistaken for mineralized bone.

"It is interesting to note that the left zygomatic arch was broken where the plough struck it. This fracture, as might be expected in such a highly fossilized skull, is quite sharp, clean and white. A fracture around the foramen magnum, though a stony one, occurred a long time ago, for it is stained. Possibly this fracture was caused by recent aborigines who used the site where the Cohuna skull was found to bury their dead.

"Besides the Cohuna skull, fragments of other skulls and portions of skeletons were discovered in the immediate vicinity by Sir Colin MacKenzie in company with Dr. Paul Dane, Dr. C. E. Jelbart and Mr. H. C. Valentine. (Mr. Valentine was the Resident District Engineer, controlling for the Water Commission, Turrumberry Weir on the River Murray, which supplies the irrigation system of the Cohuna region.) The hollows of these fragments were filled with silt. These amount to some fifty pieces in all and are, like the Cohuna skull, completely mineralized. A fragment of skull and a small piece of thigh bone were picked up by the writer near the regulator one and a half chains from where the skull was found.

"All the skull fragments are thickened—reaching in one instance 12 mm."

D. J. Mahony, formerly Victorian Government Geologist and Director of the National Museum, Melbourne, examined the site with MacKenzie in March 1926, and on 23/3/26 in "A Note on the Geological Age of the Human Skull found at Cohuna," recorded his con-

clusions. Some extracts of this were published in *M.A.*, 23/4/26. The full context was published by Mahony *et alii* (1335-42, 1936). He re-examined the geology of the region in the late 1930's, noting that siltation still took place during periodical flooding.

According to Mahony (1337-1341, 1936), ". . . [the cranium was] covered with a thin iron-stained incrustation which gives a brisk effervescence with hydrochloric acid, and which is evidently composed largely of calcium carbonate and small rounded grains of sand. This mineral coating extends over the cavities formerly occupied by the incisors indicating that these teeth were not in the jaw when the incrustation was deposited."

(This deduction by Mahony is wrong. Development of the cranium by Shellshear between September, 1939, and December, 1940, has revealed the roots of the incisors still in their alveolar sockets.)

Mahony points out that mineral crust accumulates rapidly on organic substances in contact with calcareous salt solutions and is not evidence of "geologic antiquity." He instances that one of the limb bones associated with recent skulls from the vicinity was similarly incrustated. (It will be noted that this is quite different from Dunn's opinion that no mineral incrustation had formed on any portion of the recent aboriginal remains.)

With regard to physiographic features, Mahony says :

"The district is part of the Riverina, Mallee, Wyuna and Murray Plains which extend on both sides of the Murray and except for the Terricks, a group of low granitic hills . . . a few miles to the south-west, the surface near Kow Swamp . . . appears almost perfectly level." One foot interval contoured maps of several hundred square miles confirm this.

The Murray River, Gunbower, Taylor's, Box and Barr Creeks run in a north-westerly direction as far as the Loddon River, and the general grade is one foot to the mile. Recent changes in the stream courses due to floods, droughts, siltings, etc., are indicated by deserted meanders or billabongs. South of a line between Kow Swamp and Kerang "the plains slope northwards at about 3 ft. to the mile."

So far as the geology of the region is concerned, Mahony obtained the history of old wells sunk 30 to 40 ft. in the region and of a bore of 116 ft. in the yard of the Cohuna Hotel. As Valentine saw "all the materials" brought to the surface, and "no fossils" were contained, Mahony considered they did "not belong to the marine Tertiary series."

Making reference to Chapman (1916), Mahony describes the region as "underlain by a series of strata ranging from Miocene to Holocene. The lowest beds are estuarine or swamp deposits . . . of brown clays with some lignite." Subsequent invasion of the sea deposited marine clays and limestones with abundant fossils (Miocene and Pliocene epochs). "Relative uplift of the basin then began" and estuarine beds "with upper Pliocene or possibly Pleistocene fossils" were deposited up to the end of the Tertiary period.

Resting on these are light coloured thin to coarse sands from 20 to 130 ft. without fossils, and indicating a greater rainfall and more active rivers depositing "vast sheets of sand" in the present Murray Basin. These indicate the beginning of the "present terrestrial phase."

Overlying these are red and brown loams also from a few to 130 ft., with layers of iron-stained and concretionary limestone and no fossils. These indicate desiccation; wind deposition and disintegration of surface deposits and "development of the present type of climate."

Mahony's deductions are that "the red loam in which the skull was embedded is geologically recent (Holocene) [and that there are] no adjacent older formations from which the skull could be derived by natural agencies." The skull is too complete to have been rolled far by water, and the absence of the lower jaw and the rest of the skeleton indicates that it was buried not by artificial interment but by natural agencies after being detached by decay; and therefore the "evidence available is against geologic antiquity."

It will be noted that there is one radical difference between the opinions of Dunn and Mahony. Dunn makes the light coloured sand a silt deposit in sea water and gives it late Tertiary age; otherwise their views on the physiography and geology are in reasonable agreement.

Mahony (34, 1943) says that Dr. W. R. Browne, Reader in Geology, University of Sydney, after examining the site in 1940, agrees with his opinions.

CHEMICAL ANALYSIS OF THE SKULL

A report was produced by Avery and Anderson entitled "Determination of the Mineral Content of the Cohuna Skull," presumably at about the same time as Dunn's report was furnished.

The former was not published and cannot be located now, but indirect evidence of its substance can be obtained from the following references:

MacKenzie (29, 1931, MANKIND), writing about the "Jervois skull," says: "It is not a fossil like the Cohuna skull in which the S.G. is 2.71 and the organic material less than 1%. It is reasonable to think he based these figures on the Avery and Anderson report."

Wood Jones (330, 328, 1934) mentions reduction of the 10% fats and 50% organic matters to 0.032 and 0.155% in a "perfectly normal aboriginal type" skull obtained from the Murray basin near Cohuna. Wood Jones, in his paper, was offering data about aboriginal skulls which offset any features in Cohuna claimed as unique. Presumably, therefore, the Cohuna percentages in analyses by Avery and Anderson were similar or perhaps higher than those quoted by Wood Jones.

It is necessary at this stage to record that when the cranium was received by the University of Sydney in July, 1939, the squamous part of the occipital bone exhibited two adjacent and roughly oval areas measuring 29×17 mms. and 23×16 mms. respectively, where the outer table of bone to a depth of 1 mm. had been removed, together of course with the overlying incrustation. The appearance is consistent with the application of chisel and mallet, following outlining by a circular bone saw. There is no record to indicate who removed these flakes.

Dunn stated (*vide supra*) that the back of the skull had a thicker incrustation of carbonate of lime; and if these flakes covered with incrustation were presented as such for chemical analysis, it seems possible that the mineral percentages at examination could be higher than if the original bone alone were submitted.

Secondly, it is unfortunate that the removal of these flakes meant the removal also of the inion from the cranium; the character of the external occipital protuberance must remain unknown and now its position can be judged only approximately.

At 8.15 p.m. on Monday, 19/4/26, MacKenzie delivered a lecture to the British Medical Association (Victorian Branch) at Malvern, officially announcing the Cohuna skull. Abstracts from the "Syllabus of the Lecture" are as follows:

"2. Account of the discovery and geological features . . .

"5. The anatomical characteristics of the Cohuna skull . . . now in the possession of the National Museum of Australian Zoology . . . and its position in the line of human ancestry . . . it presents numerous anthropoid features, particularly characterized by the uniformity of the correlations."

A full account appeared in *M.A.*, Tuesday, 20/4/26, under the headings "Man's Oldest Ancestor—Strange Cohuna Skull—Human Development Illustrated." A précis is as follows:

"The prehistoric skull . . . [was discovered] 2 feet below the surface in red surface loam . . . [its] interior filled with fine reddish sand . . . [typical of] arid regions where there are accumulations of sand drift. [Coating its surface was] a thin iron-stained incrustation similar to the drift within, but containing . . . [according to Mahony's geological report] carbonate of lime which accounted for its coherent nature . . . Seventy feet away at a depth varying from 3 ft. 6 ins. to 5 ft. two modern aboriginal skulls were unearthed."

MacKenzie expressed the opinion that a prehistoric skull would exhibit "uniformly thick . . . enlargement of the ridges above the eye . . . a low flat receding forehead . . . prognathism . . . an enlarged palate with length equal to or greater than breadth . . . a wide nasal cavity, and no ridge of bone separating the floor of the nose from the face . . . a receding chin" and the greatest width of the skull situated posteriorly. He added that all these would appear "in accentuated form in the Miocene ancestor"; and that Cohuna was "the most archaic skull known to Science . . . ante-dating all known human remains including the Java skull cap, Rhodesian, Piltdown and Talgai skulls" and the Neanderthal remains "by unknown ages." As these characters were evenly correlated, the Cohuna skull was not a mere "collateral [but was] in a direct line of human descent." In details of comparison he made the following points:

Cohuna's "low receding forehead had the same breadth as the Java skull cap, the jaw known, and less than that of the Rhodesian and Talgai skulls." The projection of the upper jaw and the size of the palate "exceeded that of any known human skull." The length of the palate slightly exceeded its breadth, as in the anthropoid, and both diameters "easily exceeded those of Talgai." Furthermore, it was "not horseshoe" in shape. "The diameter [of the] 3 large molars on each side . . . was only equalled by that of the Java skull . . . The greatest diameter of the conical canine teeth exceeded that of the Piltdown remains." The bone reached a thickness of "24 mm." at the eyebrow ridges.

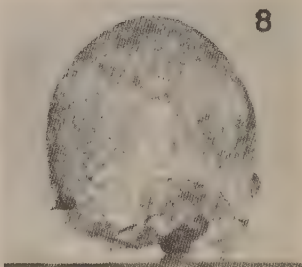
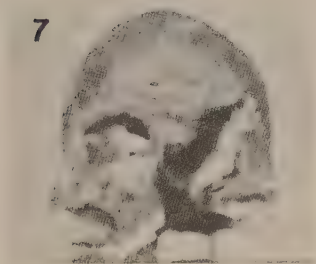
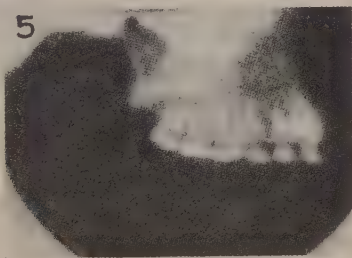
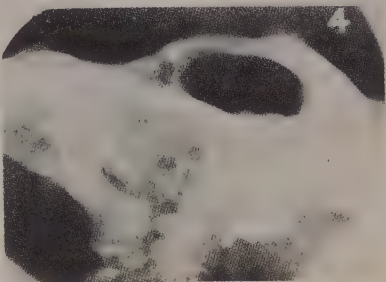
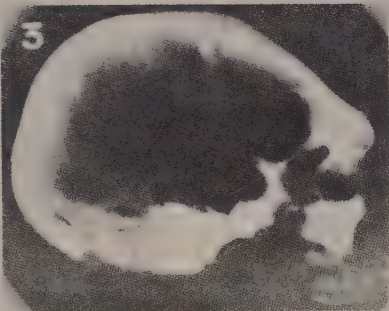
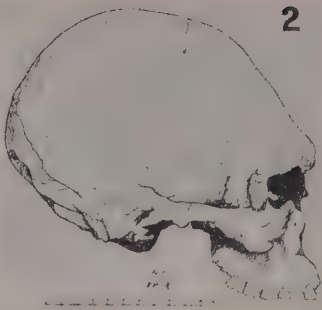
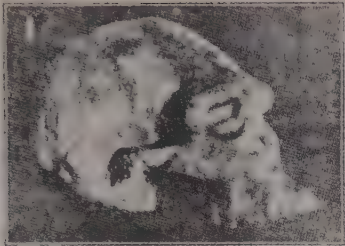
Mongolian, Negro and European types were "only variations [although] specialized . . . [of the] common ancestor of which the oldest type was admitted to be an Australian

LEGENDS TO PLATE R.

Fig. 1.—Typical photograph of the Cohuna cranium as published in the press in 1926. Note the rough surface of the incrustation, the position of the cranium in semi-profile accentuating the eyebrow ridges, and the forward projection of the reconstructed incisor teeth.

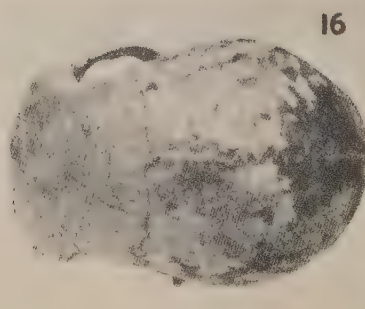
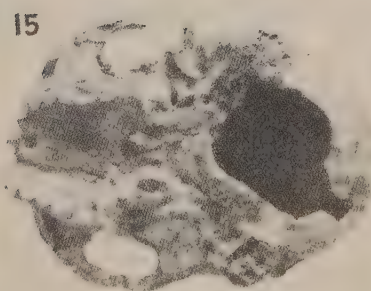
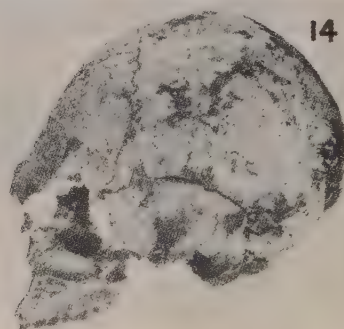
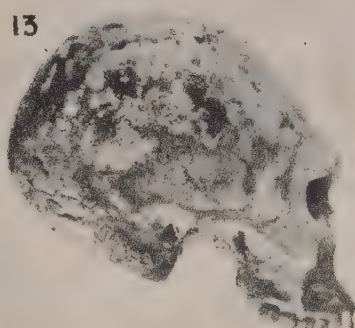
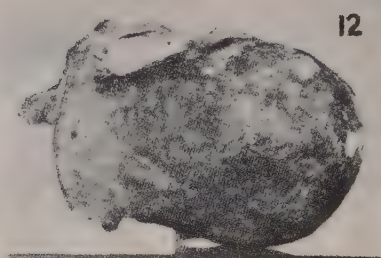
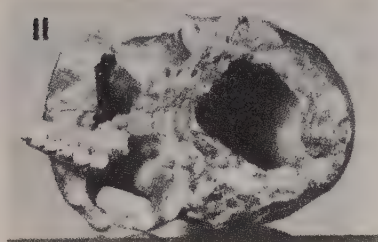
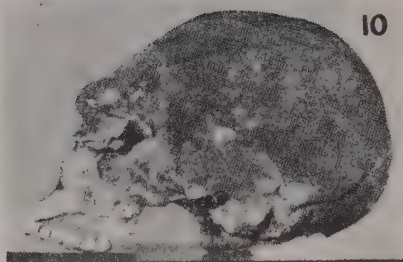
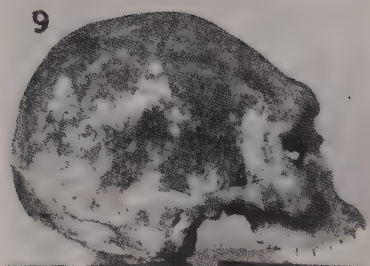
Fig. 2.—Line drawing reconstruction by the writer (N.W.G.M.), showing the Cohuna cranium in norma lateralis oriented in the Frankfort horizon. The reconstruction has been obtained by reference to the measurements which were made over the original incrustation and from photographs. Note the accumulation of mineral deposit, particularly at the lower border of the zygomatic bone and arch.

Figs. 3, 4, 5, 6.—Prints of X-ray films of lateral cranium, right zygoma, right maxilla and left maxilla, taken by Professor J. L. and Dr. K. Shellshear in August, 1939, to show the details of incrustation prior to "development."



THE COHUNA CRANIUM.

THE COHUNA CRANIUM.



aboriginal." This discovery meant that the Murray River constituted "the greatest anthropological field in the world to-day [and that it was] the great responsibility . . . of Australians to unravel the mysteries of these primitive people who in bygone ages inhabited their country."

On the same date, 20/4/26, an almost identical report appeared in the *M.S.P.* under the heading "Long Lost Race," and in the *M.M.P.* under "Romance of Cohuna."

In *Stead's Review* of 1/5/26, pages 17, 18, 19, an article under MacKenzie's name presented almost identical statements; so, there is no doubt of the accuracy of the press reporting, and it seems likely that the newspaper accounts were based on versions prepared for them by MacKenzie. The cover presented a colour drawing, signed Victor E. Cobb 15/4/26, of the cranium with reconstructed incisors.

Furthermore, typescript pages with marginal notes in MacKenzie's handwriting embodying the above comments are stored in the file on the Cohuna skull in the Institute of Anatomy, Canberra.

In *The Australasian*, No. 4034, Vol. CXX, p. 1021, 24/4/26, under the heading "Prehistoric Man, Skull found in Victoria," MacKenzie is quoted in more extreme terms, to the effect that the upper jaw projection "is that of a man in such a primitive form that he had barely learned to stand upright . . . the skull is that of a male who probably shambled along on all fours most of the time and the projected jaw indicates that he rooted for his food in the ground where necessary. He was undoubtedly extremely hairy and by the standards of modern man abominably ugly . . . the palate . . . is enormous . . . and the extraordinary size of the teeth shows that they were intended for crushing the hardest and toughest of food-stuff. No root would have been too tough. The canine teeth . . . larger than . . . in any other skull, show that whatever flesh the man obtained he was able to tear up and devour raw."

Following the claims made in this lecture, the *M.A.*, Tuesday, 22/4/26, published cabled comments. Dr. Butler of the Natural History Museum, London, was reported as stating that, although anthropologists hoped "to discover more ancient human remains . . . Asia was the most likely field." Sir Grafton Elliot Smith, Professor of Anatomy, London, said it seems "incredible . . . that there is the remotest possibility . . . of anything as old as the Piltown skull being found in Australia . . . where the oldest human remains were probably not more than 4,000 or 5,000 years old." He added that "while final judgment on the Cohuna site [depended on] the evidence provided by Professor MacKenzie [who] is highly competent . . . [it is] a large order to swallow."

Professor R. J. A. Berry, formerly Professor of Anatomy in Melbourne University, was apparently another who disagreed with Mackenzie's views.

The *S.S.* and *S.E.N.* of the same date published photographs of the "Cohuna skull," adding the comment "about the age of which a violent controversy is raging."

LEGENDS TO PLATE S.

Figs. 7, 8, 9, 10, 11, 12.—Photographs of all normæ (not oriented in any particular plane) by Professor Shellshear prior to "development." The reconstructed anterior teeth have been removed and the left maxilla which was detached at the palate fracture line is not shown.

Figs. 13, 14, 15, 16.—Photographs by Mr. S. L. Larnach, orientation in Frankfort plane by Macintosh. Right norma lateralis, left norma lateralis, basalis and verticalis after full "development" from incrustation. Note the palate fracture line in Fig. 15, where the right maxilla has been replaced.

The *M.A.*, Friday, 23/4/26, under the heading "Conclusions of Geologist—Discovery not Archaic," published a statement by Mahony that he had accompanied MacKenzie to the site; and on 23/3/26, i.e. prior to MacKenzie's lecture, he had recorded his own observations, his conclusions being that "The evidence available is against any theory of geological antiquity [although the skull may be] old in the historical sense."

In the same column MacKenzie replied to the scepticism expressed in the cables. He said that "criticism from those who had not inspected the skull and were unfamiliar with the circumstances surrounding its discovery could not be treated very seriously . . . Elliot Smith's statement, that in Australia the oldest human remains were probably not more than 4,000 or 5,000 years old, was entirely unwarranted . . . He hoped that final judgment would be withheld [until publication of the work] under the direction of the Minister for Home and Territories, Senator Pearce [would be ready] probably before the end of the year."

On the same day the *C.F.W.* carried a lengthy article including Terry's own comments and the substance of MacKenzie's lecture.

On 12/8/26 Professor J. L. Shellshear, Research Professor in Anatomy, University of Sydney, having seen the cranium, expressed the cautious view that "it was without question a most interesting specimen."

M.A., 20/12/26, announced that overseas delegates to the Pacific Health Conference were conducted through the Zoological Gardens by the Director, Mr. A. Wilkie, accompanied by Professor MacKenzie; and under the headings "Human Efficiency—Importance of Erect Posture—Anatomical Basis," the *M.A.*, 21/12/26, reported a lecture by MacKenzie before the Pan-Pacific Hygiene Conference to the effect that "the erect posture depended solely on muscular action; correlated was the development of the frontal portion of the brain, which reached its maximum in man; the human type was the most intellectual and also the most erect." Skulls to illustrate the lecture included "the Talgai, the Barham, the Tarwin and the completely fossilized, celebrated Cohuna which shows an absence of frontal region development . . . other evidence of prehistoric man in the form of skull fragments and portions of long bones . . . discovered in Victoria, were exhibited."

Dr. W. M. Strong, Chief Medical Officer and Government Anthropologist of Papua, in moving a vote of thanks, "emphasized the great importance of the discovery of the Cohuna skull."

The *M.H.* of the same date reported on another aspect of the lecture, the developmental history of the human erect posture and its bearing on medical and surgical practice. In the associated demonstration, MacKenzie contrasted "the splendid frontal development and great frontal width" (of Piltdown), with "the poorly developed narrow frontal region of Cohuna." He pointed out that "the Heidelberg mandible was too short for Cohuna and failed to cover its last molar tooth . . . The mandible" (reconstructed by him) gave "Cohuna a very formidable appearance . . . The jaw sockets at the base of the skull (Cohuna) were well defined . . . Other prehistoric skulls and long bones found at Cohuna have a chemical composition similar on analysis to that of the Java skull cap . . . up to now regarded as the most highly mineralized portion of skull in the world."

Meanwhile MacKenzie had paid some visits to the site of discovery; some geological surveys and examination of burial grounds had been carried out and a variety of other skeletal remains unearthed. Casts had been prepared under MacKenzie's direction, but it is not clear who made them. Mr. Harry Logan, who was Technician at the Australian

Institute of Anatomy under Sir Colin for many years, said that Mr. Owen, a preparator at the Institute, had used glue (gelatin, *sic.*) to join the maxilla to the cranium prior to making the casts. Possibly a government employee named Decini made them, although Sir Colin had employed Perugia, an expert cast maker from Melbourne, to make others for him. Perugia's method was to pack tightly the interior of the cranium with cotton wool so that when the gelatine had been boiled, allowed to cool to body temperature, and then poured over the cranium, it could not enter the cranial cavity. A suggestion was apparently entertained that Decini might have made the casts and permitted gelatine to enter the interior. If subsequently brought into contact with water, the swelling of the gelatine in any cracks might cause separation. This is of some significance in the later history of the cranium (*vide infra*, 2/7/39). The casts of the partially developed cranium are still on display at Canberra.

From May to August, 1927, inclusive, MacKenzie visited London, Edinburgh and Paris and gave private demonstrations, consulting among others Professor Sir Arthur Keith (of the Hunterian Museum, R.C.S., London) and Professor Marcellin Boule, Director of the Institute of Human Palæontology, Paris.

On 15/9/27 MacKenzie received from Sergeant Grant further skull fragments which he regarded as "belonging to the prehistoric Cohuna race and like the Cohuna skull completely fossilized—practically no organic matter being present. The skull cap is remarkably thick, exceeding in places that of Cohuna skull; but the frontal width exceeds that of Cohuna."

He said it was of the greatest scientific value, and dissipated any idea of Cohuna being a "freak." The fragments were examined by Dunn.

In November, 1927, MacKenzie went to Cohuna to investigate the site and obtain the rest of the remains. These he said were completely fossilized.

It may be that after these finds the terminal paragraph (*q.v.*) of Dunn's report was added to his original three pages.

On 27/1/28 A. N. Burkitt, Challis Professor of Anatomy, University of Sydney, spent several hours examining the Cohuna cranium. In notes made at the time he observed that "the skull was not fully 'developed' or cleaned," and that many measurements he made (for example 12.5 mm. labio-lingual thickness of the canines) did not correspond with Sir Colin MacKenzie's measurements. He also observed that "in the reconstruction of the mandible the molar teeth are completely out of place" and that "no curve of Spee had been allowed for in the reconstruction of the upper incisors." He recorded the bizygomatic as 145 mm., and palate breadth 76 mm.

These notes were not published, but their content was forwarded on request to Keith, who acknowledged receipt on 8/9/29, and to Wood Jones, who acknowledged receipt on 29/9/31.

Nevertheless, Keith (304-II, 1931) gave Cohuna a ranking in the company of Pithecanthropus and Sinanthropus. Keith's decisions were founded, as he says, entirely upon measurements and sagittal tracings provided by MacKenzie. In the first place, they were made on the specimen still not fully developed from its concretions. In the second, these measurements did not coincide with the unpublished measurements made by Burkitt. In the third place, Keith apparently had misleading geological information in relation to gravel beds. In subsequent publications Keith made no reference to Cohuna.

MacKenzie considered Keith's 1931 publication as being a refutation of the scepticism "of many scientists abroad" and he advised Terry to this effect. A fairly constant corres-

pondence had been maintained between MacKenzie and Terry, and MacKenzie now advised that as the Cohuna skull had "joined the prehistoric hierarchy," a small obelisk or cairn should be erected at the site; this was subsequently done.

The *S.M.H.* of Tuesday, 16/6/31, published an interview with Sir Colin MacKenzie, Director of the Institute of Anatomy, at Canberra on the Monday. The interview can be divided into two parts (1) referring to a skull found in the Jervois Ranges in Central Australia by Mr. Gilbert Rigg, F.G.S., Mining Engineer of Melbourne, about which a monograph was being prepared, and (2) some comments on the Cohuna skull. In the latter MacKenzie stressed the following points:

"Whereas in the ordinary human skull the organic material was about 30%, in the Cohuna skull it was reduced to less than 1%, so that it was practically stone. It was the opinion of many anthropologists that prehistoric man had never existed in Australia" and scepticism had been expressed about the Cohuna skull; "but that the original opinion expressed had been confirmed now by Sir Arthur Keith [and as] numerous other . . . fossilized skulls of a prehistoric nature had been discovered (in the Murray Valley) there was now no doubt that such types existed in Australia before the advent of the Tasmanians who were an earlier race than the Australian aboriginals . . . Scientific opinion was that the discovery had thrown light on the physiology of erect posture . . . [It was] not a matter of academic interest solely . . . Professor W. A. Osborne, of Melbourne, was of the opinion that the only speech the owner of the Cohuna skull could have made was a guttural noise."

In the *S.M.H.* of Monday, 20/7/31, a correspondent to this paper, A. R. Wilkie, gave a fairly comprehensive, but uncritical summary of comments on the Cohuna skull since 19/4/26.

At this stage in the history of the Cohuna cranium, discussion of it became linked for a brief period with the Jervois specimen, the official announcement of which was made by MacKenzie at the Australian Institute of Anatomy before members of the Canberra Medical Society on Monday, 27/7/31.

It was reported in the *Canberra Times* and the *S.M.H.* of Tuesday, 28/7/31, as follows:

This skull was found in the Jervois Ranges in Central Australia, lying in a mulga bush beside the skeleton of a modern female aborigine, said to have been killed by her tribe for having acquired the skull in west Queensland, imagining it to be that of her dead baby and subsequently carrying it in her dilly bag. Found by an explorer and prospector in Central Australia, Mr. James O'Neill, it was given to Mr. Charles Gibson (Mining Geologist), then to Rigg, and finally to Mackenzie. Rigg unsuccessfully led an expedition in search of the mandible and thigh bones belonging to the skull.

MacKenzie's reported statements are that the skull is of "a 30 year old adult . . . [bone thickness] varying from 5 mm. minimum to a maximum of 13 mm. behind and 15 mm. in front . . . the capacity is less than 1,000, lying between 956 and 980 . . . This is the lowest known cubic capacity of any complete human skull."

He expressed the view that Jervois was supplementary to Cohuna, the latter having a facial skeleton which was lacking in Jervois and Jervois having a non-fossilized brain case which could be divided; that the "Jervois skull and brain and the Cohuna fossil constitute, from their medical value, the most important of the lowest prehistoric documents in the world to-day . . . [that further] correlated specimens from the Murray Valley [are being supplied] thanks to the investigations of Mr. Murray Black." (Mr. Black has long been an enthusiast in skeletal discovery, co-operating first with Sir Colin, and subsequently with the University of Melbourne.)

MacKenzie (29, 1931) said: "A brain cast [of Jervois] has been made and, from the point of view of the interpretation of the modern brain, this can be regarded as the most primitive known."

S.M.H., 29/7/31, published Elliot Smith's opinion (cablegram—London) that the word "prehistoric" was "quite unintelligible"; also Wood Jones' view that the claims were "frankly ridiculous."

S.M.H., 30/7/31, published further comment by Wood Jones: "Jervois . . . skull of a modern aboriginal woman . . . It was hopeless to expect to find the earliest types of man [in Australia . . . since he] came by boat . . . a fully developed *Homo sapiens*."

MacKenzie said, "In no circumstances will I enter into a newspaper controversy with Professor Wood Jones." Nevertheless the announcement of Jervois had reawakened opposition to MacKenzie's views on Cohuna and MacKenzie did embark on an acute controversy with Wood Jones.

S.M.H., 5/8/31, published comments by William Wright, Professor of Anatomy, London University, made in Adelaide on his arrival to conduct the Primary F.R.C.S. He thought that there was "no doubt that man came to Australia after the continent was separated from the Malay Peninsula and the presence of the dog argues set purpose rather than drift by accident." He refused to express an opinion about the Jervois specimen, saying that geological conditions were "a far more trustworthy guide to age than cranial capacity."

S.M.H., Saturday, 8/8/31, reported remarks by Dr. Herbert Basedow in Adelaide on Friday. "The skull was not prehistoric but it embodied several morphological characters which must be regarded as entirely atavistic. He had inspected the Jervois skull at Canberra and "the smallness . . . was undoubtedly remarkable . . . while the thickness of the cranial wall . . . was no less striking . . . Science is deeply indebted to Sir Colin MacKenzie for having directed attention to a remarkable type of primitive Australian which throws considerable light upon the probable appearance and stage of evolution of the immediate ancestors of the present aborigines."

The *M.A.*, Monday, 10/8/31, announced that the Royal Society proposed to hold a symposium on Thursday night to discuss the authenticity of the Jervois skull as a prehistoric representative. It added some further comments by Wright, repeating his doubts that the Jervois skull could rank with the Java and Pekin skulls in primitive characteristics.

M.A., Friday, 14/8/31, reported the symposium of the Royal Society of Victoria. Casts of Jervois, Java, Pekin, Talgai and other ancient skulls were exhibited together with two modern aboriginal skulls for comparison. Mahony and Summers (Geology School, Melbourne, and Associate Member of Royal Society of Victoria) referred to the complete lack of geological evidence of antiquity in the Jervois skull and Professor F. Wood Jones, in referring to its anatomical features, pointed out that published measurements of 1500–2000 Australian aborigines were available for comparison and the Jervois skull was in no way remarkable; "it most certainly is not the smallest capacity ever recorded in a complete human skull."

The *M.A.*, Monday, 17/8/31, published a statement by Mr. J. A. Kunoth from Adelaide claiming that he had found the Jervois skull on his land in the Jervois Range, that he knew the old gin Oochrima, to whom it belonged, and that she had died three years previously. He considered "Sir Colin a long way out in his reckoning of the old gin's age." It seems likely that Kunoth was confusing the calvarium alleged to have been carried by the gin with the skull of the dead gin herself.

Both the *M.A.* and the *S.M.H.* of Monday, 17/8/31, published statements by MacKenzie from Canberra replying to his critics. He pointed out that O'Neill had furnished an official report of the discovery at the request of the Minister for Home Affairs (Mr. Blakeley). He had emphasized to the Canberra Medical Society that the "matter was of medical and not geological interest . . . to be primitive a specimen need not necessarily be geologically old . . . he had said . . . that the skull was not a fossil like the Cohuna skull and that its age could not be calculated . . . the main value of the skull was that it provided a complete brain cast of a healthy adult primitive skull with a capacity less than 1000 c.cs. . . . the combination of primitive features seen on it had never previously been demonstrated on any normal human adult brain. If there existed in Australia hundreds of modern aborigines with a brain capacity less than that of the Jervois skull and even less than 900 c.cs. . . . there was less discrepancy between the brains of apes and those of modern aborigines than between those of modern aborigines and white people."

The *M.A.* and *S.M.H.*, Wednesday, 19/8/31, under such headings as "Jervois Skull controversy continues, Aborigine and Ape Man," published further comments by Wood Jones. He said, "it is all to the good that Sir Colin MacKenzie has withdrawn his claims about the geological antiquity . . . and the Jervois skull can be judged solely by the standards of modern Australian aboriginals." He offered to forward to MacKenzie a list of registration numbers of Museum skulls with a cubic capacity less than the Jervois. He claimed that MacKenzie had confused cranial capacity with brain volume and that the figures quoted by MacKenzie were in any case erroneous. He quoted Cuvier 1900 c.cs. and Anatole France 1060 as indicating range of brain volume, and pointed out that the gulf between ape and aborigine was far greater than between aborigine and Anatole France.

He also said "Sir William Turner half a century ago forestalled me by recording 930 and 946 c.cs. as the cranial capacity of two female Australian aboriginal skulls."

He added: "Sir Colin MacKenzie has, may be, done well in bringing to the public notice the interest which attaches to the primitive living Australian aborigine, even if his methods have been perhaps unduly dramatic."

In the *M.A.*, Thursday, 20/8/31, MacKenzie replied that "it was incredible that any scientists should have put up a campaign against the skull without having seen the original . . ." He contrasted Wood Jones' attitude with that of Basedow, who "came to Canberra and examined the original specimen before expressing an opinion. It is interesting to note that he is in complete agreement with the original pronouncement." (This last sentence was, of course, somewhat of an exaggeration on MacKenzie's part.)

The *M.H.* of Thursday night, 20/8/31, carried the statement by Wood Jones that he refused to have any more to do with the skull or the controversy.

That a stage had arrived when the controversy was passing from polemics to fantasy is indicated by a publication in the *S.M.H.*, 21/8/31, wherein Mr. Keith Kennedy, Assistant Editor of MANKIND, writing from the Australian Museum, drew attention to MacKenzie's short article in MANKIND, and suggested that criticism of MacKenzie was misdirected. He added that "there was no reason why Java man could not have had enough intelligence to make rafts and canoes and so reach Australia."

The *M.A.* of Saturday, 22/8/31, published a final statement by MacKenzie to the public.

He said the Jervois skull was "essentially a medical document." In its brain cast "the complexities of the modern brain were revealed in their simpler form . . . A modern

scientific expedition had arrived this week to spend a year in North and Central Australia . . . It was time Australians woke from their slumbers on scientific matters."

In official correspondence MacKenzie was at this time referring also to communications from the University of Texas *re* prehistoric man in Australia.

The *S.M.H.* of Saturday, 29/8/31, published abstracts from an address by Mr. Heber Longman, Director of the Queensland Museum, to the Constitutional Club in Brisbane on Friday. Longman produced the skull of an Australian aboriginal woman which he said was a parallel of the Jervois skull, and he was reported as suggesting "that the recent sensational claims of Sir Colin . . . were those of a man so interested in his own work and obsessed by the fascination of his own researches that he did not allow himself sufficient time to examine the significance of the records compiled by other people."

It was following this controversy that Wood Jones commented on the 145 mm. bizygomatic measurement of Cohuna as not unusual, being as much as 150 in recent aborigines, the Cohuna palate breadth of 76 being exceeded by measurements up to 80. (These measurements had been made by Burkitt—*vide supra* 27/1/28.)

On 14/11/31 the *S.M.H.* produced another article on the Jervois skull, but by December 9th, as the *S.M.H.* put it, "casts of the Jervois skull failed to arouse interest in England."

Discussion died down on both Cohuna and Jervois; and Wood Jones (324, 1934), writing of contrasting types of Australian skulls, placed the Cohuna skull (measurements of which he based on Burkitt's 1928 notes) with the Tamworth skull of Burkitt and Hunter, 1922, the Wentworth skull, the Halford skull (1878), and others described by Flower (1907), and Barnard Davis (1875), grouping all these as characteristic of rugged, massive Australian skulls of exaggerated masculine appearance. He classed Jervois with small normal female skulls. He relegates all to Boule's class of anthropological "bric-a-brac."

On 17/7/36 Professor W. K. Gregory, Curator of Comparative and Human Anatomy, the American Museum of Natural History, New York, acknowledged receipt of a cast of Cohuna from MacKenzie and commented:

"Assuredly, whatever the exact age of the Cohuna skull may have been, its morphological characters mark it as one of the most primitive of all skulls that may be referred to *Homo sapiens*. You and your Museum are surely to be congratulated upon possessing the original of this valuable relic which goes far to support the claims of the Australian aboriginal skull to be the most primitive among all still living races." (This cast was also of the not fully "developed" cranium.)

Sir Colin's health had been unsatisfactory for some time, and he retired towards the latter part of 1937.

On 25/2/38 Dr. Joseph Birdsall presented a letter of introduction from Professor E. A. Hooton of Harvard University to Dr. C. V. Mackay, who was then Acting Director of the Institute, and between then and June, 1938, made some examination and perhaps measurements of the Cohuna cranium at the Institute. He took back to the U.S.A. a cast made prior to the restoration of the incisors and left canine.

Mr. N. B. Tindale, Ethnologist, South Australian Museum, who had been associated with Birdsall, also obtained a similar cast and one of the reconstructed mandible and of the unrestored palate for display in the South Australian Museum.

On 13/7/38 Dr. J. F. Fenner applied to Dr. F. W. Clements, Director of the Institute of Anatomy, to work on the Aitape and Cohuna specimens. Clements, 31/8/38, pointed out

that measurements had been taken by Birdsell and independently by Hector G. Jones, B.D.S., of Toowoomba. On 13/9/38 Jones applied for facilities to make more extensive studies of the maxilla. At this stage Clements was hopeful that a publication including a description of the discovery of the cranium, its affinities, its non-metric and metric characters and a detailed examination of the teeth and palate, would be produced by Jones, and that Fenner would include some of its measurements in a paper dealing with a comparison of 1000 aboriginal skulls in various Australian museums.

Clements had written to Keith, 26/8/38, asking him if he would critically review such a manuscript. Keith agreed and suggested that a brain cast might be obtained from the undivided skull through the foramen magnum. Between 13 and 23/11/38 Jones, on enquiry, found that Logan considered an endocranial cast could not be obtained without dividing Cohuna and that Perugia had previously given a similar opinion. Clements, as custodian of the cranium, was naturally reluctant to sanction its division. To expedite some conclusions Clements sent Keith a paper on the geological background of the Murray Valley and also a cast of the Cohuna cranium, but not of the reconstructed mandible which most people considered too artificial.

Overseas interest had not entirely waned; for example, on 18/2/39 J. C. Trevor, of Emmanuel College, Cambridge, asked for a cast and for copies of any relevant publications. A cast was sent on 24/3/39 with the comment that only two further casts remained at the Institute.

A preliminary description, together with photographs and tracings, were sent to Keith by Jones. Keith returned these in March, 1939, with the comment that the skull must be cleaned right down to the bare surface before descriptions and measurements could be valid; that MacKenzie's plaster restorations of the maxillary incisors must be removed; also that the base, right mandibular fossa, nasal cavity and sutures required special accurate description. Jones frankly admitted that he had not recognized that the skull was only partially developed and asked Clements to obtain assistance for him from Sydney University to have it cleaned and an endocranial cast made. Clements wrote to Burkitt on 27/4/39 for advice, indicating that he was "particularly anxious that a description of this skull should be printed as soon as possible, but . . . equally anxious that it should be up to recognized standards." Burkitt replied on 5/5/39, "I am fully in agreement with your contention that a complete and accurate description of the skull should be published, judging from my notes made in 1928 . . . I should expect that it would still take several months to clean properly." Clements replied to Burkitt, 12/5/39, "I agree with you most emphatically that it is time something got into print. Mr. Jones . . . has relinquished the skull and will submit the palate and teeth, this means that the skull is back where it was in 1936."

The cranium was despatched to Jones on 21/6/39 so that he could make photographic enlargements of the individual teeth to study the cusp patterns more fully. On 2/7/39 Jones, while cleaning the teeth with a nail brush, soap and water, saw the left palate, maxilla and zygoma separate from the cranium. Fearing that progressive damage might be occurring, he sent it at once to Sydney University and on 3/7/39 informed Clements of his action, commenting that the washing had disclosed a crack through the entire length of the palate. Clements replied on 6/7/39 that "the last time Burkitt inspected it he foretold the presence of a crack or some similar change to produce the asymmetry seen when inspecting the skull from the front. He was under the impression that the earth pressure had pushed up the maxilla and the zygoma on one side."

Discussion between Clements and Burkitt resulted in the decision that the cranium would be cleaned and dealt with by Burkitt and Shellshear but that Jones would be permitted to complete his work on the teeth and palate.

X-RAYS

Shellshear took a series of X-ray pictures to determine the amount of breakage and incrustation before commencing "development" of the cranium.

27/7/39. Right zygoma, lateral.

14/8/39. Left molars. Detached maxilla and teeth. Right zygomatic basal region and maxilla (before treatment).

15/8/39. Right zygoma. Undersurface of left maxilla (to ascertain line of fracture for reconstruction), supraorbital edges (details of incrustation).

8/9/39. Photographs of all normæ before treatment.

He found the cranium to be covered with an incrustation varying in depth from $\frac{1}{4}$ in. over the zygoma to $\frac{1}{8}$ in. and $\frac{1}{16}$ in. over the superciliary ridges and skull generally." Shellshear subsequently "developed" the exterior of the cranium.

The writer is indebted to Drs. J. L. and K. E. Shellshear for permission to reproduce in miniature these original X-rays and photographs, and expresses thanks accordingly. It is interesting to note that trabecular structure is clearly discernible in these X-rays taken through the "undeveloped" mineral incrustation.

Professor H. Priestley, Department of Biochemistry, University of Sydney (in personal communication with the writer, 28/6/49), said that "Dunn's original statement was correct in that organic material had been replaced and the Cohuna cranium was literally stone. The replacement represented loss of calcium phosphate and substitution by calcium carbonate." In addition to analysing chemically a small piece of the cranium, Priestley who was present when the accretions were being removed by Shellshear, had observed a small parchment-like patch of different looking material over the malar region as it was being "developed." Analysis of this material by Priestley gave a positive reaction for keratin.

There is no literature dealing with the persistence of keratin, but the possible presence in or on the skull of organic matter derived from the gelatine used in casting operates against the application of this observation.

After thorough consultation of literature relative to fossilization and mineralization, Priestley had concluded that distinction between the two could not be made, and considered that neither a further search for what elements are present in the skull, nor a further organic examination, would help dating of the skull. Dr. D. P. Mellor, Reader in Chemistry, University of Sydney, tells me (17/10/51) that crystalline radiography, in the hope of observing alterations of the patterns of the crystalline material, would not help in dating the cranium.

As far as Australia is concerned, the C^{14} and the Fluorine examinations are not readily available. The C^{14} method is probably of no value with the Cohuna specimen; the quantity of material required would involve destruction of the entire cranium and the leaching resulting from the repeated flooding of the site where it was found would almost certainly invalidate the application of the C^{14} method, even if enough material were available.

Possibly some assistance would be obtained by the Fluorine method; but this too is doubtful. Although one requirement of the test is observed, namely that the cranium is from "a matrix permeable to ground water or percolating moisture," no pilot series of

undoubtedly contemporary fossil bones is available. Further, as Oakley (47, 1949) indicates, "Fluorine content is unreliable . . . where the conditions . . . are liable to produce extremely rapid and variable mineralization" and also "where porous bone is impregnated with silt; or where the phosphate has been largely replaced by a secondary mineral." Oakley instances "the Kenya bones where the phosphate has been replaced by silicate at an early stage of mineralization, thus precluding the continuance of fluorine fixation."

This is precisely what appears to have happened to the Cohuna cranium. Firstly, the views of Dunn and Priestley are that the osseous material has been completely replaced, calcium carbonate having been substituted for calcium phosphate, and the available evidence suggests that mineralization in the Murray region is rapid; Mahony (33, 1943) mentions coating and impregnation with carbonate of lime "in a few weeks." Secondly, silt contamination of its cancellar bone seems more than likely.

On 7/10/39 Dr. Daniel S. Davidson, about to return to Philadelphia after a year's anthropological research in Western Australia, asked for a cast of Cohuna and was advised by Clements, 11/10/39, of the new work of "development" in hand, and of the invalid nature of the old casts.

On 3/1/40 Professors Burkitt, Shellshear, Priestley and Browne visited the site of the discovery. Priestley picked up a tooth on the very spot and in the dug-up heaps at the site were pieces of tibiae, etc., in the same incrustated state as the skull (earlier statements inferred that the area had been sieved).

They regarded the region as subject to frequent over-floods; and teeming with birds and vegetation, it constituted an ideal site for rapid water mineralization (*vide supra*, *Argus* report 14/11/25 also), and an ideal region to have supported a large aboriginal population.

Mahony, 16/1/40, wrote to Burkitt: "It is very good news . . . publish a description of the Cohuna skull, which has too long remained part of a skeleton in the cupboard."

Tindale (145, 1941) stated: "Recent examination of the Cohuna site, in Victoria, has yielded indications that the Cohuna mineralized cranium was derived from the same beds as a species of thickshelled, fresh-water mussel (not yet described) different from that represented in the present lagoon. The recent species is found also as food debris in an upper bed, associated with unmineralized human burials of present-day aborigines."

To the best of the writer's knowledge, no description of the "indications" in the above quotation has been published. Possibly it is implied that at Cohuna a comparison of *Unio* shells can be made similar to that in the Tartangan site (Hale and Tindale, 154-7, 1930).

The claim there was that a spot graph of greatest shell thickness against umbo-ventral height for living specimens and for fossil specimens from Tartangan layer C, showed consistently thicker shell for the latter and permitted their classification as *Unio* (*Hyridella*) *provittatus* sp. nov.

Following conchological and palæontological enquiry in Sydney (Miss J. Allan and Mr. H. O. Fletcher), it is understood that thickness of shell in *Unio* may also vary greatly under the influence of a variety of conditions including environmental, climatic and age.

In any case it is difficult to see how this can be employed because there appear to be no valid means of proving the Cohuna skull's genuine *in situ* associations. Its depth from the surface was only two feet, of which the superficial half is wind-deposited sand, and both mineralized and unmineralized skeletal material has been unearthed from greater depths at the same site; but it is in this aspect that a fluorine test may be helpful if it can be applied.

Mr. H. M. Hale, Director of the South Australian Museum, 14/1/41, asked for a second cast of Cohuna and enquired when replicas of the cleaned cranium would be available.

Clements replied on the 17th that no spare casts were left and "Shellshear has produced so many extensive changes in the cranium of the skull that I doubt if any good purpose would be served by studying the old cast."

Fenner (352, 1941) published eleven measurements of Cohuna after it had been "developed" by Shellshear. They are as follows:

Smallest frontal breadth	.. ..	(ft. -ft.)	86
Post-orbital breadth	.. ..		90
Greatest frontal breadth	.. ..	(Co. -Co.)	105
Stephanion breadth	.. ..	(st. -st.)	95
Median sagittal frontal arc	.. ..	(n. -b.)	140
Median sagittal frontal chord	.. ..	(n. -b.)	126
Angle of frontal convexity			147°
Angle of convexity of cerebral part of frontal bone	.. ..		158°
Upper facial breadth	.. ..	(fmt.-fmt.)	117
Anterior inter-orbital breadth	.. ..	(mf. -mf.)	27
Orbital breadth	.. ..		44

Burkitt, 20/3/41, wrote to Clements: "We all look upon it as being simply an Australian aboriginal skull at the primitive end of the normal range of variation, possibly near the Talgai."

Shellshear, 8/12/41, wrote to Clements *re* protection (during the war) of Talgai, Cohuna and the cranium of an aboriginal female of quite normal appearance from the Murray region in much the same state of mineralization as Cohuna. Clements replied, 11/12/41, "I think you people can protect Cohuna as well as we can and if you are willing to look after it for me I am perfectly happy."

Mr. Johnson, the American Minister to Australia, wanted to compare with Cohuna a complete cast of Pekin man which he possessed, and Clements wrote to Jones, 7/1/42, "If I could show Mr. Johnson your article, at least I could show that we had done some work on Cohuna." Jones had submitted a thesis in 1939 to the Faculty of Dentistry, University of Sydney, and been granted a doctorate. The thesis included a description of the teeth and palate of the Cohuna specimen. It was not published.

Mahony, 11/8/42, wrote to Clements requesting a cast of Cohuna for the National Museum and asking also, "Is a description of the skull being prepared for publication?"

Clements realistically replied on the 14th, no cast available, and if there were, he would be loth to send it, "for all existing casts represent the Cohuna skull in the undeveloped state . . . such as Shellshear had finished indicated that the existing conception required radical adjustment to conform to its discoveries. Under these circumstances I think it would be wrong to exhibit existing casts as representing the true Cohuna. It is my ambition when the existing development is completed to have another set of casts made . . . under present circumstances it would seem that this will not occur until after the war is over."

Mahony, 24/8/42, in a letter to Shellshear, commented: ". . . the Cohuna skull which will now emerge from the fog of mystery that surrounds it," and in a letter to Clements on 28/8/42 drew attention to a statement in Keith's "New Discoveries . . ." which inferred

that MacKenzie had four other fossilized human specimens from the same region. Clements in his reply, 1/9/42, said: "There is no record of these fragments at the Institute."

On 2/9/42 Mahony wrote to Clements to the effect that he had prepared a summary of publications on mineralized human remains in Australia.

On 13/10/42 Burkitt wrote to Clements: "Shellshear and I have given Mahony a short note: The Cohuna skull when properly developed came within the range of the modern aboriginal skull in all its measurements . . . being simply a somewhat fossilized normal aboriginal skull."

Campbell (Pl. XIII, 1942) suggested a reconstruction of the anterior teeth of Cohuna, which instead of the highly simian appearance seen in MacKenzie's reconstruction show no special simian features, and conform with the large arches frequently seen in aboriginal skulls.

Mahony (34-35, 1943) published the consensus of opinion obtained from Burkitt, Shellshear, Priestley, Browne and Campbell that the Cohuna skull, when properly "developed," came within the range of the modern aboriginal skull in all its measurements and may be relegated to modern category.

Hooton (357, 1946) refers to the Cohuna specimen as "a very primitive appearing, adult male with exaggeratedly Australoid characters."

Brodrick (69, 1948), in a short comment on the Cohuna specimen, notes that "This cranium has been by some compared with the Solo skulls from Java, but the Cohuna is undoubtedly sapiens," also "it is true that the primitive features noticeable in living Australians are accentuated in the Cohuna cranium."

A letter, 22/11/49, from Mr. R. Stone, Curator of the Institute of Anatomy, to Macintosh indicated that the Institute still had three casts of the undeveloped cranium (two on exhibition).

Hale, 11/10/50, wrote to the Director of the Institute, saying that the Adelaide Museum had during the war shifted material for safety to a tunnel in the hills. Among other specimens that were lost was the cast of Cohuna. The Museum wished to obtain another "in view of the importance of this interesting specimen."

Dr. E. H. Hipsley replied, 24/10/50, directing attention to Mahony's publication (34-35, 1943) and saying that if in view of these more recent investigations a cast was still desired, a spare one was available and would be sent.

Hale replied the same day, asking for the cast, and adding "The specimen will always be of interest to anthropologists despite the conclusion reached by some observers . . . after independent examination of the site and study of the specimen Dr. J. Birdsall and Mr. N. B. Tindale came to conclusions which tended to support the presence of two series of bones at the Cohuna site and that mineralized bone was present as well as fresh material. This is supported by the existence of a stratum within the irrigation channel containing an extinct species of *Unio* shell . . ." (*vide supra*, Tindale, 145, 1941; also Hale and Tindale, 154-157, 1930). The cast was sent on 24/11/50 and acknowledged on 6/12/50.

Some elaboration of this view is possible, in that among the few crania from this region possessed by Sydney, and the large number possessed by the Melbourne Anatomy Department, there is a continuous grade from heavy, through moderate and slight down to non-mineralization. There is also a continuous morphological grade from extreme ruggedness and size down to smoothness and very orthodox measurements. But these ranges, A of

mineralization, and B of morphology, do not graph as parallels ; on the contrary, they are quite haphazard.

Wood Jones (1934), Mahony and Wood Jones (1937, 1936) expressed this more briefly in referring to the morphology of mineralized skulls from regions both north and south of the Murray.

It is an obvious thought that heavy represents a longer passage of time than does slight mineralization. There is also the obvious fact that floods and droughts, continuously changing courses of meanders, creeks and even larger channels, are subjecting different sites to fluctuating mineral concentrations both at the same and at different periods.

In 1949 and subsequently Burkitt and Macintosh re-examined the Cohuna cranium in the course of writing an article on "Early Man in Australia" for "The Australian Encyclopædia," which awaits publication.

Subsequently the writer continued the examination of the cranium.

SUMMARY AND CONCLUSIONS

The position of the Cohuna cranium to-day is that it has been dismissed in rather summary fashion. It is suggested that the subject should be reopened for the following reasons :

The general morphological appearance is not very dissimilar from Talgai and Keilor, and the profile is like that of Talgai if allowance is made for Talgai's youth.

It lies nearer to the extreme limit of anatomical range presented by Talgai than does Keilor.

The Cohuna facial skeleton and palatal development are unusually powerful, at the more primitive end of the scale of modern aboriginal morphology. Burkitt (1928) referred to Talgai as having "considerable affinity with Cohuna—in the massive eyebrow ridges, powerful maxillæ and molars, narrow forehead and the palate and anterior teeth."

Wood Jones (328, 1934), although an opponent of any fame being accorded the specimen, states "It is much to be regretted that no measurements, illustrations or casts of this skull have ever been made available to the physical anthropologist, for, since all the circumstances of its finding point to its being a recent skull, its claims must rest on its morphological characters alone."

Shellshear (1926), Trevor (1939), Keith, by inference (1939), Clements (1939), Burkitt (1939), Davidson (1939), Mahony (1940 and 1942), Hale (1950) and other local and overseas anthropologists have expressed the need for a publication of its description.

Broom (23, 1950) points out that the Wadjak skull was kept secret for about thirty years ; the little human jaw fragment from Kedung Brubus was not described until forty years after it had been discovered ; the wonderful human skeletons found in Moravia in 1879 were never fully described and have now been destroyed ; Smith-Woodward waited ten years before publishing a short report of the Singa skull ; the British Museum received the Rhodesian skull in 1921, but a full report only appeared after seven years.

It is now twenty-six years since the Cohuna cranium was discovered and a description of it has not appeared.

For reasons presented in the text, spectrographic chemical analysis of powder from drill holes seems desirable and if mineralization is not complete, a fluorine test may be possible :

whether other human remains from the site could constitute an adequate pilot test series remains a problem.

The question of length of time required to produce warping, and finally fracture of a fully or partly mineralized cranium in silt is provocative.

More complete geological and palæontological data from bores in the region seem desirable.

Anatomically one would like a brain cast, and the problem of getting one without dividing the cranium may yet be achieved, thanks to a suggestion by Professor H. Dew, Dean of the Faculty of Medicine, Sydney.

Some 60 people, scientific and lay, have been connected with the Cohuna specimen. Whether favourably or unfavourably disposed towards it, each has contributed something to an understanding of it. The writer has endeavoured to present fully and dispassionately their contributions.

Notable points in the story are the following :

It was a layman, Terry, who made the original observation of its possible importance.

The claims made by MacKenzie, though excessive, stimulated acute controversial interest and subsequent work on the Australian aboriginal which he had stated to be one of his primary aims. The skeletal collection which is available to the Melbourne Anatomy Department stems indirectly from his original excitement ; and in any case, one has only to recall the fracas over the first Neanderthals, the Piltdown skull, *Hesperopithecus*, *Pithecanthropus*, Taungs and many other skeletal finds to realize that MacKenzie was in good company.

There are the perceptions by Burkitt in 1928 not only of the anatomical facts of the matter, both metrical and non-metrical, but also of distortion and fractures under the masking incrustations.

Then there is the transportation of the matter from the clouds back to the ground by the critical analysis and comparative data presented by Wood Jones, and the reduction of the specimen to analysable form by Shellshear's precise examination with radiography and subsequent development.

Finally, the keenness and persistence of Clements as Director to see something published deserved an earlier result.

The spiritual vicissitudes of the cranium in the controversy, polemics and fantasy of press reporting and its unhappy linkage with the Jervois specimen are equalled by its physical misfortunes. Apart from its underground experiences of earth pressure leading to distortion, and possible traumatic attack by recent aborigines and a plough-scoop, it sustained the activities of cast makers, the amputation for chemical analysis, of a valuable anatomical landmark (theinion), and a partial dislocation by water.

Originally introduced as pre-Pithecanthropian and then reduced to mediocre modernity, it seems to earn, if not deserve, a little prestige.

In any case, should it prove to be absolutely recent, it still has intrinsic worth in demonstrating persistence in present-day aborigines, of the outlandish phenotype with a more primitive morphology in massive facial skeleton and teeth, extremely narrow diameter between the temporal surfaces of the frontals, and marked dolichocephaly combined with a large cranial capacity.

Newspapers Abstracted and Abbreviations Used in Text

<i>Australasian</i>	..	..	<i>Argus</i> Newspaper, weekly.
<i>C.F.W.</i>	..	..	<i>Cohuna Farmer's Weekly</i> .
<i>C.T.</i>	..	..	<i>Canberra Times</i> .
<i>M.A.</i>	..	..	<i>Argus</i> (Melbourne daily).
<i>M.H.</i>	..	..	<i>Herald</i> (Melbourne daily).
<i>M.M.P.</i>	..	..	<i>Morning Post</i> (Melbourne daily).
<i>M.S.P.</i>	..	..	<i>Sun Pictorial</i> (Melbourne daily).
<i>S.E.N.</i>	..	..	<i>Evening News</i> (Sydney daily).
<i>S.M.H.</i>	<i>Sydney Morning Herald</i> (daily).
<i>S.R.</i>	<i>Stead's Review</i> (Melbourne monthly).
<i>S.S.</i>	<i>Sun</i> (Sydney daily).

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N. W. G. MACINTOSH.

Polynesia : Physical Anthropology.

Graydon.

Blood Groups and the Polynesians.¹ By Dr. J. J. Graydon, Commonwealth Serum Laboratories, Melbourne.

The prodigious feats of navigation, whereby the Polynesians were able to reach and populate practically every inhabitable island of the vast central Pacific area, have aroused widespread admiration and no little speculation in the western world. Many centuries before Columbus these intrepid mariners set out on well-planned migrations across thousands

¹ This paper was delivered before Section F at the Brisbane meeting of A.N.Z.A.A.S. in May, 1951, and is based largely on racial blood grouping data collected by R. T. Simmons, N. M. Semple and the author with various collaborators.

of miles of landless ocean and arrived safely at their intended destinations. There is little doubt that some of these remarkable voyages must have been preceded by equally remarkable exploratory sailings.

And yet with all their navigational skill and knowledge of the heavenly bodies, they had not learnt to write and knew nothing of the wheel or of metals. In fact, they were literally a stone-age people although advanced in social organization and many arts.

Surprisingly homogeneous in language and appearance in view of the vast area of their domain, the Polynesians are physically strong and virile with high mental capacity. Their physical characteristics have usually been described as Caucasoid although Mongoloid and Melanesian characters show up in a small proportion. There is evidence indicating that in certain areas Polynesian traits have been modified by admixture with other racial elements or complexes, but these influences seem to have been somewhat localized, and do not appear to have greatly affected the main bulk of the Polynesian population at the time of the intrusion by Europeans.

Where could such a unique race have originated? By what route or routes had its ancestors reached their widely scattered realm?

These questions have been asked many times and answered in almost as many different ways. In searching for the original homeland of the Polynesian, investigators have confined their attention naturally enough to coastal areas. Various points along the Asian coast from Japan to Egypt and along the east coast of Africa and the coast of Peru have been seriously suggested at one time or another. Even a mythical lost continent in the Pacific has had its supporters.

Weckler (1943), after surveying the evidence available at that time, stated that it seemed certain that Java had once been the home of the Polynesian, but there was no substantial evidence identifying an earlier homeland. Weckler also referred to the two most popular theories which have been advanced concerning the route taken by the early Polynesians into the Pacific.

According to the first of these the Polynesians after leaving Java followed the geographically obvious route through Melanesia by which long ocean voyages were largely avoided. However evidence has been accumulating which appears to have convinced most ethnologists that the Melanesian route was not a path of these early migrations. A route through the islands of Micronesia seemed to be the only alternative to that through Melanesia. Due more to the shortcomings of the earlier theory than to weight of positive evidence in support, the Micronesian route has found great favour. According to this second theory the Polynesians left Java and sailed north-east between Borneo, Celebes and the Moluccas, passing south of the Philippines and thence along the scattered chain of Micronesian islands. On reaching the eastern end of the Carolines they embarked on long ocean voyages, either through the Marshalls to Hawaii, or more probably via the Gilbert and Ellice Islands to Samoa and the Society Islands.

Convinced that the Polynesians came to the Central Pacific islands not from the west, but from South America, Heyerdahl in 1947, with five companions, on a faithful replica of an Inca sea-going raft, made an epic crossing of the Pacific from Peru to the Society Islands. This remarkable adventure proved that Inca rafts were capable of long ocean voyages under the influence of prevailing currents and that such rafts, setting out from the Peruvian coast, would be carried by the Humboldt and south equatorial currents right to the Society Islands.

Now it is generally believed that the Society Islands were the first Polynesian homeland in the Central Pacific and that it was from there that the other island groups were colonized.

This lends weight to the theory that the Polynesians came from South America.

Avias, who was a colleague in one of our blood grouping surveys, in 1949 presented a theory of composite races to account for the peopling of the Pacific islands. In his view the Polynesians have resulted from admixture of a more or less dominant Amerind complex with an Ainoido-Negrito-Proto Melanesian complex.

Our contact with the problem arose as an offshoot from serological work connected with the intensified interest in blood transfusion during the past 10-15 years.

After developing a suspending fluid suitable for preserving blood cells and procedures for preventing deterioration during transport to our laboratory in Melbourne where such cells could be examined under favourable conditions, we commenced a series of surveys of blood group frequencies in various races of the south-western Pacific.

Briefly the procedure is as follows :

Field collaborators collect by finger or ear puncture from each individual a few drops of blood into a tiny bottle containing the anticoagulant preserving fluid. These samples after placing in ice-packed thermos flasks are forwarded by air to Melbourne, where examination proceeds immediately.

The samples are tested with a number of representative types of serum and each is classified according to the reactions obtained in the presence of sera specific for the different blood group systems.

From the observed frequencies of the serological classes it is usual to calculate the frequencies of the genes that give rise to them. In each system this reduces the number of classes needed to represent the results, which can be a very real advantage. For example the eight principal Rh genes give rise to 36 genotypes which fall into 27 serologically recognizable phenotypes. Fortunately for those calculating the gene frequencies some of the genes and many of the serological classes are extremely rare.

The surveys to date have included samplings of Australian aborigines, Maoris, Papuans and other natives of New Guinea, Admiralty Islanders, Fijians, Filipinos, Javanese and other Indonesians, Dyaks and other races of Borneo, New Caledonians, Chinese, Japanese, Malays, Marshallese, Hollanders and white Australians. Current surveys are being made of special groups including the Ainu of Japan, Negritos of the Wessel-lakes area of Dutch New Guinea, the Bainings and other tribes of New Britain, and the Kapinga-Maringi and Caroline Islanders. In some of this work we have been collaborating with Professor J. B. Birdsell of the University of California, and this association has already borne fruit, for the Ainu, the Marshallese and Carolines series were made possible through the offices of Professor Birdsell.

The main aim of the surveys has been to provide objective data by which the classification of these races on a genetic basis might be facilitated. It was hoped that the blood group frequencies so obtained would help ethnologists to resolve many controversial issues concerning the races in this area. It was not felt that blood grouping would completely supplant the older and accepted criteria of the anthropologist. In fact from the very first we have relied on the trained observer familiar with the local native population for the selection of the material for our surveys. Invariably this selection has been based on the old established visual criteria and on whatever genetic data, relating to each individual sampled, could be elucidated by questioning and from available records.

From the earlier work few inferences could be drawn because of the paucity of comparative data for neighbouring and related races. But the gaps are being filled in steadily and more information may be gleaned from each successive group studied. A similar accumulation of data will be necessary before the more recently discovered blood factors will be able to make their full contribution.

It was only natural that this blood grouping of Pacific races should have led to speculation on the intriguing problem of the migration routes of the Polynesians, who were represented in our series by the Maoris. It was thought that the Polynesians would not have passed along the islands of Melanesia or Micronesia without mixing in some degree with the natives already in occupation. Further it seemed likely that this mixing of races would be revealed by serological tests which might also provide evidence on the extent of the admixture. Appreciable admixture should be apparent in similarities of blood group frequencies.

The published data for other Polynesian groups are confined to the A, B and O system. Consequently in this paper the Maori has been regarded as the Polynesian prototype although the previously mentioned slight heterogeneity of the group should not be forgotten.

The Maoris have been examined in two separate surveys. The first was conducted in 1944 when we could determine only the A₁, A₂, B and O, M, N and Rh factors, but were not equipped to distinguish the Rh types, the S subdivisions, certain gene variants, secretor status, the Lewis blood group and the taste reactions to phenyl thiocarbamide, all of which were covered in the second survey.

In the earlier investigation we found no evidence to support the Melanesian theory but could make no helpful Micronesian comparisons. In the intervening years much relevant data has accumulated and it is now possible to review the theories outlined earlier with greater factual backing.

The extent of this newly acquired data can be gauged from Table I, in which blood gene frequencies for various human populations of Oceania are presented. A few continental peoples have been included for comparison.

Only the most comprehensive surveys available for each population have been given in order to keep the table to a reasonable length. Even with this restriction the bringing together of data for so many of the blood group systems has produced a rather cumbersome table.

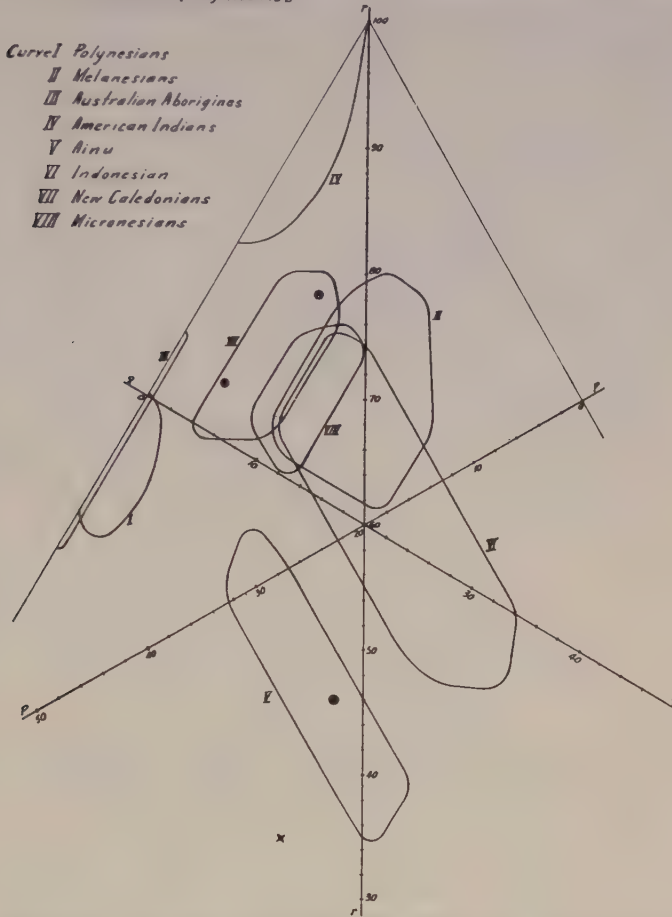
For an exhaustive list of the racial blood grouping data published up to 1939 the reader is referred to the monumental compilation by Boyd in *Tabulae Biologicae* of that year. It is understood that steps are being taken to bring this work up to date and to extend it to cover some of the "newer" blood group systems.

As a visual aid to interpretation the A-B-O data have been plotted using triangular co-ordinates as first suggested for this purpose by Streng in 1926. In Figure 1, which is a slight modification of that of Avias, 1949, the plot points are not shown, but only areas bounding the points obtained for the several surveys in each racial group.

Obviously there is some overlapping, but there is also a striking segregation which is more or less into groups.

Much can be inferred by close study of such a figure, but for the present purpose it is sufficient to note that the Polynesian, American Indians and Australian aborigines occupy areas which hug closely the line of zero B. On the contrary the Melanesian, Indonesian and Micronesian figures lie in areas extending from average to high B. The New Caledonians,

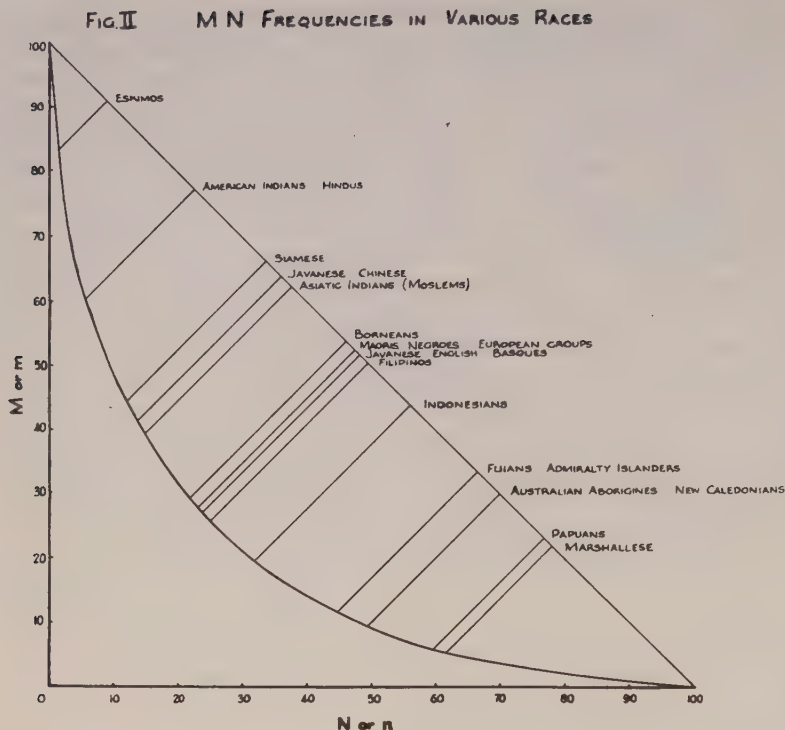
FIG. I- A,B,O BLOOD GROUP GENE FREQUENCIES IN VARIOUS RACES
AFTER AVIAS (1949) MODIFIED



who have Melanesian, Polynesian and Australoid elements, lie in the area just where such a group would be expected—between the areas occupied by the component groups. Clearly, the Polynesian is closer to the American Indian than to either the Melanesian or Micronesian in respect of A, B, O groups. Our tests have shown the sub-groups A_2 and A_2B to be absent from all the Pacific races so far examined. Because this interesting finding contributes nothing to the elucidation of the present problem it has not been referred to in Table I.

A diagrammatic summary of relevant M, N frequencies is given in Figure 2, which is similar to that used by Avias, 1949, and many others earlier.

The Maoris are believed to possess a Melanesian element which is more evident than elsewhere in Polynesia with the exception of Samoa, where trade with Melanesian Fiji has been carried on for centuries. If the Polynesians are closely related to the Amerinds, we would expect to find their position in Figure 2 to be intermediate between those of the American Indians and the Melanesians, and this is the case.



Again one can find nothing to favour either the Melanesian or Micronesian routes, for the M, N frequencies in Melanesia and Micronesia are similar yet quite unlike those in the Maoris. When opportunity offers we hope to test other Polynesian groups, and it might be expected that the frequency of *m* will be higher than in the Maoris.

It is unfortunate that there are no Amerind figures available for the S (Sydney) subdivisions of the M, N types. These give promise of great usefulness in resolving racial differences as brief reference to the frequencies observed in Australian aborigines and the natives of New Guinea shows. The M, N distributions of these groups are fairly similar, but tests with anti-S serum indicate that S+ individuals do not exist amongst the Australians but are relatively common in New Guinea. Thus the use of S serum has provided clear-cut distinctions between these populations when tests with M and N sera were inconclusive.

We will have to await the compilation of further S data before we can say which of the theories under consideration is favoured by such tests. The S distributions for Maori, Melanesian and Micronesian groups have been determined, but these add little to the differences already revealed in the M, N figures (see Table I).

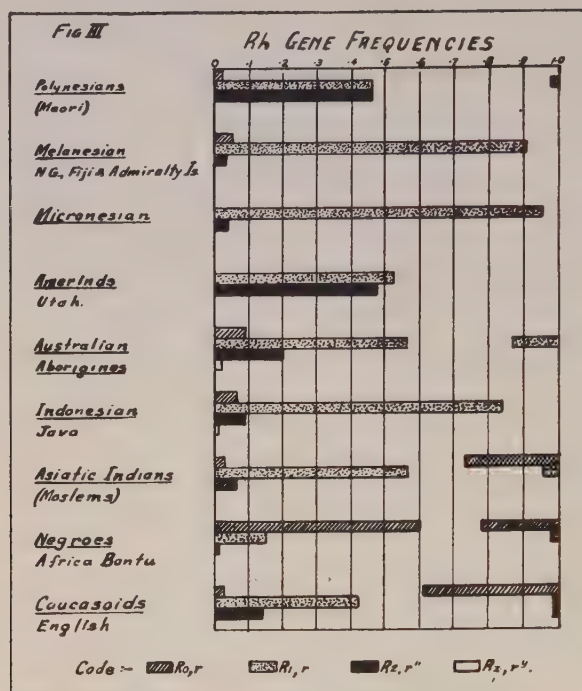
Some of the Rh gene frequencies of Table I have been presented in different form in Figure 3.

The so-called Rh-positive genes, i.e. those containing the elementary gene D of Fisher, have been placed to the left of the chart; the Rh-negative genes—those lacking D—are to the right.

TABLE I
Blood Gene Frequencies in Various Populations

Population.	A, B, O.			M, N, S.						Rh.						P. P.	Lewis Le ^a Gene.
	A.	B.	O.	m.	n.	mS.	nS.	mS.	nS.	R ₀ cDe.	R ₁ CDe.	R ₂ cDe.	r ade.	r' Cde.	r' cde.		
I. Maoris (6, 23)	0.338	—	0.662	0.525	0.475	0.014	0.500	0.048	0.438	0.027	0.465	0.486	—	—	0.022	—	0.55
Hawaiians (2)	0.382	0.018	0.604	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Samoans (2)	0.103	0.118	0.766	—	—	—	—	—	—	—	—	—	—	—	—	—	—
II. Fijians (18)	0.225	0.120	0.660	0.332	0.667	—	—	—	—	—	0.110	0.840	0.030	—	—	—	—
Admiralty Islanders (18) ..	0.146	0.136	0.720	0.339	0.661	—	—	—	—	—	0.030	0.940	0.030	—	—	—	—
“Papua,” N.G. Natives (5, 14, 17)	0.215	0.127	0.674	0.227	0.773	0.052	0.149	0.084	0.715	0.021	0.943	0.020	0.016	—	—	—	—
III. Australian Aborigines (14, 19)	0.251	—	0.749	0.297	0.703	—	0.256	—	0.744	0.085	0.564	0.201	0.021	—	0.129	—	—
IV. American Indians, Ute (10) ..	0.011	—	0.989	0.76	0.24	—	—	—	—	?	0.324	0.476	—	—	—	—	—
American Indians, Mexico (27)	0.031	0.016	0.953	0.79	0.21	—	—	—	—	0.06	0.64	0.27	0.03	—	—	—	—
VI. Javanese (22)	0.178	0.180	0.642	0.632	0.368	—	—	—	—	0.065	0.837	0.086	0.012	—	—	—	—
Other Indonesians (22) ..	0.130	0.133	0.737	0.435	0.565	—	—	—	—	0.04	0.81	0.13	0.02	—	—	—	—
Natives of Borneo (7) ..	0.210	0.195	0.591	0.542	0.458	0.03	0.48	0.03	0.46	0.039	0.873	0.079	0.009	—	—	—	0.50
Filipinos (16)	0.152	0.181	0.671	0.510	0.490	—	—	—	—	0.03	0.88	0.08	0.01	—	—	—	—
VII. New Caledonians (20) ..	0.204	0.059	0.731	0.297	0.703	—	—	—	—	0.054	0.833	0.107	0.004	—	—	—	—
VIII. Marshallese (24)	0.135	0.134	0.723	0.222	0.778	—	0.234	0.115	0.651	0.006	0.952	0.042	—	—	—	—	0.51
Indians, Asiatic (Moslems) (26)	0.185	0.261	0.583	0.622	0.378	0.288	0.312	0.060	0.340	0.034	0.562	0.060	—	0.266	0.044	—	—
Siamese (12)	0.148	0.257	0.595	0.662	0.338	—	—	—	—	0.111	0.755	0.112	0.022	—	—	—	—
Chinese (20)	0.165	0.139	0.681	0.630	0.370	—	—	—	—	0.040	0.760	0.195	0.005	—	—	—	—
Japanese (5, 11)	0.274	0.176	0.543	0.540	0.460	—	—	—	—	—	0.702	0.277	—	0.02	—	—	—
Negroes, Bantu (Africa) (15)	0.190	0.132	0.678	0.525	0.475	—	—	—	—	0.704	0.072	0.059	0.016	0.119	0.029	0.001	0.636
Pygmies, Bantu (Africa) (9) ..	—	—	—	—	—	—	—	—	—	0.638	0.062	0.195	—	0.105	—	—	—
Caucasians, English (13) ..	0.279	0.061	0.660	0.535	0.465	0.256	0.279	0.074	0.386	0.026	0.420	0.141	0.002	0.389	0.010	0.012	0.47
Caucasians, Basques (3) ..	0.256	0.026	0.717	0.538	0.462	—	—	—	—	0.005	0.376	0.071	—	0.532	0.015	0.002	—

Where the gene frequencies are very low, chance plays a big part in whether or not they will be detected in a series of tests. Consequently arguments based on comparisons of very low gene frequencies must be treated with reserve. But the frequencies of the common genes which in this part of the world are R_1 and R_2 carry far greater weight as they are subject to much less statistical error. Particular attention should be paid to these genes, though appreciable frequencies of other genes should not be neglected.



In the figure it is apparent that the pictures presented by the Maoris and the American Indians are strikingly similar and both are remarkably unlike those of the Melanesians and the Micronesians.

The frequency of gene R^1 is much lower and of R^3 much higher in the Polynesians and Amerinds than in the Melanesians and Micronesians. This offers further strong serological argument in favour of an affinity between the former pair.

There is therefore no serological justification for the lumping together of these two races into a common major human classification.

The serological differences to which attention has been drawn are major ones—all supporting the hypothesis of a Polynesian-Amerind relationship and at the same time sharply distinguishing the Polynesian from the Melanesian and Micronesian. Equally well-defined differences could be drawn between our Maori group and the Indonesians or with any other race listed in the table.

TABLE II.

Blood Group System.				Melanesian.	African Negro.
A, B, O	..	..	..	A ₂ absent	A ₂ ratio highest yet A ₁ found
M, N	..	..	..	$m = 0.3$	$m = 0.5$
Rh	..	..	..	$R_0 = 0.1$	$R_0 = 0.6$
				$R_1 = 0.9$	$R_1 = 0.15$
				r absent	$r = 0.22$

It is therefore logical to assume that the Polynesians and the Amerinds belong to the same racial class and have similar major components. They have of course some differing minor elements such as the undoubted Melanesian revealed in the Samoan and occasionally in the Maori.

The gene R_0 is absent or of low frequency in all four groups which is in marked contrast to the high frequency observed in African Negroes.

Though not pertinent to the problem under consideration, I feel I cannot let this opportunity pass to draw attention to the wide serological gulf between the Oceanic Negroes as represented by the Melanesians and the African Negroes. Major points of difference have been observed in each blood group system for which comparative figures are available. These are indicated in Table II.

Now the Polynesians are comparatively recent settlers in their Pacific homelands. In fact their arrival in the central Pacific is generally believed to have been at a time when the cultural development in the lands of South-east Asia was more advanced than their own. It seems that if the Polynesians came from that area they must have left a long time before their arrival in central Polynesia. In this case they would surely have left much evidence of their protracted stays in the intervening islands and one would expect racial admixture to be apparent.

There is certainly evidence that Polynesians have been at some time in parts of Melanesia and Micronesia but collectively that evidence hardly seems strong enough to be indicative of a long stay in those areas. Nor does it show convincing preference for either Melanesia or Micronesia as the probable path of the ancestors of the Polynesian. Further, much of the evidence so far produced could be explained equally well by a westward migration from Polynesia.

The blood grouping figures favour neither Melanesia nor Micronesia. If no other facts were known they would almost compel one to look for another alternative. And the only obvious alternative, the very long landless ocean path from America, gains strong support from blood gene frequencies.

The serological similarity of these two groups which is not unsupported by likenesses in other criteria suggests that the Polynesian and the Amerind have a common dominant component. Further, this component, perhaps somewhat differentiated during centuries in the widely diverse environments of the Americas, could have reached Oceania at any time with the aid of prevailing ocean currents. That ocean currents have had a major influence on the migratory journeyings of the Polynesian has gained much support in recent years following the successful enterprise of Heyerdahl and the involuntary voyages of two other groups quoted by Avias, 1949.

These three remarkable ocean voyages took place within a space of twelve months. How many similar sailings have taken place over the centuries we have no idea, but we know that long ocean voyages taking advantage of ocean currents and prevailing winds were well within the capabilities of the seafaring early Polynesian.

Avias (1949) has suggested that the Polynesian has resulted from admixture of an Amerind component with a proto-Melanesian group which had arrived in Polynesia before the Amerinds. He described the latter group as a negrito-ainoid complex with possibly a dash of Papuan. Our results suggest that the proto-Melanesian component must be weak in Polynesia, as it has left little serological evidence of its presence in the Maoris.

Nevertheless there appears to be much to indicate that another race reached some of the islands of Polynesia.

This group, though perhaps outnumbered by the "Amerinds," may well have been responsible for some of the similarities of culture and language that have been quoted in support of an eastward course for the Polynesian. It is also likely that since his original settlement in the central Pacific the Polynesian has, on occasion, driven westward into both Melanesian and Micronesian territories and possibly even into Indonesia.

In conclusion it is submitted that the serological evidence presented in this paper strongly supports a Polynesian-Amerind relationship, making it probable that the islands of Polynesia have been settled largely by migrations from continental America. Prevailing ocean currents and other factors suggest the coast of Peru as the starting point of such migrations.

The suggestion that the Polynesian possesses a second component derived from peoples of the western Pacific islands would account for similarities in culture and language that have been reported in Melanesia, Micronesia and Polynesia.

As a future project the determination of S and "Duffy" distributions in relevant racial groups may provide evidence of great importance, for Pantin and Janquerra (1951) report a difference of 100% in the frequency of Duffy, $F_y(a_+)$ between Mongoloids (Chinese) and Brazilian Indians.

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J. J. GRAYDON.

Australia: Material Culture.

Campbell and Walsh.

Aboriginal Implements from Camp Sites in the South of South Australia and Victoria.
By Dr. T. D. Campbell and Miss G. D. Walsh.

In April of 1947, during a vacation trip, the writers collected implements on brief visits to a number of camp sites in the south-east of South Australia and in several places in Victoria. In most instances, only the smaller examples of implements were collected on account of limited transport facilities.

The following notes briefly describe the locations of the sites and a classification of the material collected.

(1) This small but interesting site was found near the Cave Range and about fourteen miles west of Penola, South Australia. It consists of a small blown sand-ridge near Cave Range in Section 221, Hundred of Monbulla. This is a well timbered district with fresh-water swamps in the vicinity. Its main interest is in the fact that Cave Range is the farthest inland main ridge of the notable south-eastern series of parallel consolidated dunes and is some distance from the coastal ridges which provide large numbers of camp site remnants. At this site, in the short time available, an interesting collection of small implements was made. All are of flint; a material which had been derived either from one of the adjacent consolidated limestone ridges or may have been transported from a coastal source of supply.

Micro size (101).

Points : Woakwine forms, 35 (mostly poor forms) ; abrupt trimmed, 4 ; Bondi, 16.

Segments : ordinary, 16 ; rudder, 2. Trapezes, 5.

Triangles, 1.

Scrapers : side, 5 ; double side, 2 ; end, 2 ; nosed, 2 ; semi-discoid, 3 ; tula flake, 6 ; pyramidal discoid biface trimmed, 2.

Larger specimens (17).

Scrapers : side, 7 ; double side, 4 ; nosed, 1 ; concave, 4. One quartz percutor. Total, 118.

(2) A series of sandhills, locally known as Hood's Drift, occurs on the east side of the Hundred of Kongorong (in Section 541). Here is abundant evidence of intensive Aboriginal occupation. On the north-eastern slopes, sheltered from the prevailing south-westerly winds, are extensive blown areas presenting vast quantities of implements and implement débris. The site is strikingly situated, as the hills give a wide outlook over most of the surrounding country. There is evidence that the region was well timbered in years past and water supplies lie within easy reach. It has previously been an attraction to other collectors who have gathered material from the site. Mitchell (1943) has published a brief description, with photographs, of part of the drift area.¹ In the few hours permitted for our collecting, an interesting set of implements was gathered, including a fine assortment of micro forms. All the implements from this site—with the exception of the granitic hammer stones—are of the typical flint which occurs on the adjacent coastal margin in a vast, unlimited supply of raw material. Out of the total of over 200 implements, only about a dozen present a relatively fresh, broken surface ; otherwise, all have the yellow-brown " patination " which is typical of the implements previously gathered by us and by other collectors who have worked on the many inland sites of this Kongorong region.

Microliths (105).

Points : Woakwine, 29 ; Bondi, 7 ; also 18 broken or poorly shaped Bondi.

Segments : ordinary, 26 ; narrow, 2 ; rudder, 1.

Triangles : scalene, 4. Trapezes, 8.

Scrapers : side, 8 ; carinate, 2.

Larger implements (139).

Scrapers : casual, 16 ; nosed, 4 ; semi-discoid, 14 ; tula flake, 10 ; concave, 6 ; end, 10 ; end with side trimming, 9 ; end with double side trimming, 7 ; side, 32 ; double side, 14.

Knives (flake), 7.

One large flake (15 cm. × 11 cm.) with end and side trimming. Seven large (approx. 10 cm. × 7 cm.) trimmed flakes of the cleaver type. Two percutors.

Total, 244.

(3) Mt. Gambier. This small site occurs on the south hillside above Valley Lake.

Micro forms (31).

Segments, 4. Elouera, 1.

Points : Woakwine, 1 (broken) ; crudely trimmed forms, 13.

Scrapers : end, 5 ; side, 7.

¹ Mitchell, S. R., " Geology and Ethnology of the Kangorong Hills, South Australia," *Vict. Naturalist*, LX, 59-62, 1943.

Larger forms (14).

Scrapers : end, 2 ; side, 9 ; concave, 1 ; semi-discoid, 1. Crudely trimmed point, 1.
All these implements are of flint.

Total, 45.

(4) An extensive sandhill area near the Victorian border ; in Section 258, Hundred of Gambier. No implements of micro size were found here. All are of flint.

Scrapers : side, 4 ; end with side trimming, 6 ; concave, 1 ; nosed, 2 ; coroid, 1 ; tula like, 1. One irregular shaped trimmed point.

Total, 16.

(5) Cape Bridgewater, west of Portland, Victoria. This area is a denuded sand-blown site on the cliff tops. No micro forms were collected ; all implements are of flint.

Scrapers : end, 3 ; side, 1 ; double side, 2 ; double concave, 2 ; semi-discoid, 5.

Total, 13.

(6) Lake Lonsdale, near Stawell, Victoria. This small sandhill area is situated on the north-west side of the lake and has been intensively examined by Victorian collectors for many years. With the exception of one large implement, all the specimens gathered are of micro size. The materials concerned are quartzite, and indurated claystone ; a few examples are of quartz.

Micros (77).

Segments : ordinary, 12 ; rudder, 6.

Trapezes, 11. Triangles : scalene, 4 ; equilateral, 2.

Points : Bondi, 10 ; Woakwine, 10 ; abrupt trimmed, 7 ; broad leaf shape, 2.

Scrapers : side, 4 ; end, 2 ; thumbnail, 3 ; discoid, 1 ; semi-discoid, 1 ; tula like, 2.

One large trimmed casual scraper.

Total, 78.

(7) Point Cook, Port Phillip Bay. The area visited is one of wind-blown sites near the shore line and north of the aerodrome. These sites have been continuously examined by Victorian collectors for many years ; but apparently they continue to offer occasional specimens for the patient searcher.

All the specimens collected (92) here are of micro size and most were made from either quartzite or chert ; a few are of quartz.

Segments : ordinary, 23 ; rudder, 8. Trapezes, 9. Triangles, 8.

Discoidal, 1 ; semi-discoid, 2 ; thumbnail, 10 ; biface trimmed discoid, 1.

Points : abrupt trimmed, 10 (mostly poor or broken) ; Woakwine type, 12 (poor forms) ;

Bondi form, 2 (poor forms).

Scrapers : side, 1 ; end, 1. Nuclei : conical, 2 ; prismatic, 2.

Also collected : a half portion of a small basaltic polished edge axe-head.

Total, 93.

The census of the above collection of implements shows a preponderance of micro forms—406 against 201 of the larger forms. Possibly this is mainly due to the circumstances of our transport and collecting, together with a special interest of the writers in the smaller types of implement.

Although the collection is not numerically large, on account of its being incidental to a touring vacation, it does present several points of interest to add to the observations previously gathered through extensive collecting by the writers, and others in these southern

areas. The Aborigines of the southernmost part of South Australia and of western Victoria—which are closely related natural geographical regions—were obviously intimately acquainted with and expert in fashioning, a wide variety of microlithic forms.

The collection from the inland site near Penola is of special interest in several ways. It provides evidence of definite, if not numerous, occurrences of some of the micro forms which are characteristic of the coastal regions of the lower south-east of South Australia. It also brings their occurrence to a more northerly extension for this region than has been appreciated before. These particular specimens are of poorer quality than is typical of the coastal sites. In the absence of local supplies, flint in this area may have been brought about fifty miles from the abundant coastal flint sources.

Previous extensive collection in the Hundred of Kongorong (Campbell, Cleland, Hossfeld) indicated² that for this area of camp sites microlithic forms were far more abundant on the littoral than on the inland sites. But our brief visit to Hood's Drift (and from the so far unpublished results of subsequent collecting at this same site early in 1948) shows that at least for this large camp area microliths occur in appreciable numbers. The specimens showed the marked preponderance of yellow-brown stained implements—a feature which is no doubt due to soil chemistry and possibly an age factor.

The gathering of mostly micro forms on the Victorian sites visited supports the evidence previously gained by Victorian workers that the same forms occur there as on the neighbouring South Australian areas. Also that the same micro forms were made from materials other than flint—the typical raw material of the South Australian sites. The fact that such intensively examined sites like those of Lake Lonsdale and Point Cook can still produce a useful “picking” of these micro implements, indicates either the abundance of manufacture or long-standing usage of these small forms.

The collection here described is not large; but it is felt the descriptions will provide a useful detailed record. The importance of intensive examination of properly recorded camp sites, careful classification of implements with accepted terminology, and the provision of census results cannot be emphasized too strongly, for it is only by the amassing of such evidence in its geographical extensions that knowledge of the use and importance of archaeological material can be safely assessed.

T. D. CAMPBELL.
G. D. WALSH.

REVIEWS :

South Pacific Commission, Project S.10, Report No. 1 : Some Notes and Suggestions Regarding Conservation of Important Archaeological Sites and Objects in South Pacific Territories. By Felix M. Keesing. 1951. 8 and xiii pp. 5/-.

This report, which deals with the recording and preservation of archaeological sites, historic monuments and archives in the South Pacific, forms an excellent basis for the objects of the project. Mr. H. E. Maude, the Member for Social Development of the Research Council of the Commission, makes an appeal for co-operation and support from the various administrations and scientific societies in the region.

Dr. Keesing, Professor of Anthropology at Stanford University, gives an interesting outline of the possibilities of archaeology as a science for both professional and amateur

² Campbell, T. D., Cleland, J. B., and Hossfeld, P. S., “Aborigines of the Lower South-east of South Australia,” *Rec. Sth. Aust. Mus.*, VIII, No. 3, 1946, 445-502.

workers in the South Pacific, and of the intriguing story of human migrations and cultural development that the Pacific possesses and will yield to the archæologist in the future. He stresses the need for the use of skilled and accurate methods in exploring archæological sites, makes constructive suggestions for the protection and handling of known finds, including the need for island museums to display archæological materials, and the story behind them. A list of institutions to be notified of new archæological discoveries is given, and an excellent bibliography of the subject is provided.

The literature on the movements of peoples in the South Pacific is extensive and interesting, even though it consists mostly of hypotheses and conjectures based on similarities of words and customs, on myths, art and other traits, but it reveals the tremendous interest of scientists and people throughout the world in such matters, particularly since the Kon-Tiki Expedition's stimulus. Any relics, therefore, which will throw light on this problem should be preserved, and as Dr. Keesing quite rightly says, the onus of responsibility to preserve the archæological sites and specimens in the Pacific Islands—for local residents, both native and otherwise, and for visitors and students—lies with local administrations, some of whom have already enacted protective legislation and have set up collections of the material. It is to be sincerely hoped that the South Pacific Commission will receive full and active support everywhere in this admirable project.

F. D. MCCARTHY.

Lamet, Hill Peasants in French Indo-China. By K. G. Izikowitz. *Etnologiska Studier*, No. 17, 1951, 375 pp., 129 figs. Goteborg.

This monograph describes the Lamet people and their environment, their villages and buildings, social organization and government, technology, food collecting and cultivation, stock raising, economic life, use of resources and trade, cultural drives, and social changes. The Lamet cultivate rice and other crops in a shifting agricultural economy and raise buffaloes, pigs, poultry and bees. In addition, they utilize many plant foods growing in the forests and are expert hunters and fishermen, but these sources of food fit into a seasonal sequence with their cultivated products. Buffaloes and bronze drums constitute their principal objects of wealth. Many of the magical formulas connected with various stages of the crops are given in the very interesting chapter on agriculture. The interest of the Lamet to the student of Melanesia and Polynesia lies in the similar economic patterns of life common to each group. The technologist will be interested in the similarity of the range of fish and animal traps and snares employed by the Lamet to those of Indonesia and Melanesia.

F. D. MCCARTHY.

CORRESPONDENCE, NOTES AND NEWS :

The Rock Paintings near Glen Isla, Victoria Range, Victoria.

Sir,

In the *University of Melbourne Gazette*, Vol. VI, No. 10, of December 14th, 1950, pp. 96 f., I published a brief preliminary report on the Melbourne University Excursion to Glen Isla, which took place from

October 23rd to October 27th, 1950. Published in a university gazette, the article naturally could not reach those whom it really concerned, viz. the small community of ethnologists and archaeologists in Australia, but also the permanently increasing circle of students of primitive art. It is intended to visit the Glen Isla rock again

when more photographs and drawings will be taken. The wall has already been photographed in colour, but photographs and water-colour sketches so far have been taken of single groups and figures only. When an accurate complete copy of the whole wall is made with the help of an auxiliary network of squares, we shall be able to illustrate the rock paintings as they actually are and, especially, in the order and arrangement in which they actually appear. For, as has been pointed out in the preliminary article, the main result of our examination is that the lithograph published by the Rev. John Mathew (the author of "Eaglehawk and Crow"), with his paper "Note on Aboriginal Rock Painting in the Victoria Range, County of Dundas, Victoria," in the Proceedings of the Royal Society of Victoria, 1896, is not reliable in that the arrangement and order, also some details of the figures, *are not as illustrated by Mathew but largely different*. It is important to make this known now, even before a correct copy is available, so as to warn students, lecturers and authors in Australia and abroad to use Mathew's reproduction only very cautiously. Many details are fairly well reproduced by Mathew, but without first-hand knowledge of the actual paintings it is difficult even to use those reliable details. The paintings must have faded considerably since Mathew's time. Our criticism of his reproduction, however, concerns facts which have nothing to do with the fading. Consequently, the reproduction after Mathew in Prof. D. S. Davidson's "Aboriginal Australian and Tasmanian Rock Carvings and Paintings," as well as F. D. McCarthy's identical reproduction in the *Australian Museum Magazine*, June, 1939, are subjected to the same criticism. Likewise, the two first paragraphs of W. J. Walton's article in MANKIND, Vol. 2, No. 4, p. 96 (June, 1937) refer to paintings which, in the form and

arrangement *bona fide* indicated by Walton, do not really exist. Just a few corrections may already be given at this stage: Mathew observes frankly that he did not reproduce all the little strokes apparently representing vegetation. But he claims "Those I have given show how thickly they are distributed and their relative length and positions." Actually this is not so. Mathew's lithograph, which is not based on a photograph but Mathew's own drawings, gives no idea of the surprising quantity and arrangement of innumerable little vertical strokes over a large proportion of the rock wall. Whether this is a point of major or minor importance it is still too early to decide. The position of most figures on the wall differs from that given by Mathew. Other figures are drawn inaccurately. For instance, the large figure No. 20 on the left-hand side of Mathew's picture does not exist. But a striking large figure, which might have been misrepresented in a sketch from memory, exists in the lower right-hand corner of the rock wall. The group No. 14 is well done, also its position is fairly correct, although it is actually a little higher up on the wall. But then the lithograph gives no idea of the actual contours and proportions of the painted area in comparison with the surrounding plain rock. The animals Nos. 8 and 9 in the upper right-hand of Mathew's picture are actually rather in the upper region of the centre.

That an author of the standing of Mathews could reproduce such an inaccurate illustration may perhaps be explained in this way: Mathew obviously had no camera at his disposal, so he had to rely on drawings. As the picture, or rather the painted rock surface, is large enough to make it extremely difficult to draw a complete copy of the whole surface, Mathew had to be content with copying single figures piecemeal. These he marked with numbers, hoping to put them together at home.

The numbers in his reproduction show that he failed to put the fragments together in their actual order, while other details in the lithograph have no number at all. It is regrettable, therefore, that Mathew did not mention the technical procedure by which he obtained his picture and that he did not explain that only single figures and groups, but not the whole composition (if there is a composition), can be used for scientific reference.

LEONHARD ADAM.

Department of History,
The University of Melbourne.

Pecked-marked Carvings and Sign-talk. Sir :

During the month of November 1951, I was the guest of Mr. and Mrs. Waudby of Mount Wedge cattle station, situated on the Stuart Bluff Range about 170 miles N.W. of Alice Springs.

Whilst there, Mr. Waudby took me out in his utility to see some paintings and pecked-marked carvings he had recently found, and with us was an old Aboriginal called One Pound Jimmy.

Our first stop was at a place called Adjumberri, and under a ledge of quartzite, beside a dry rock-hole, Jimmy showed us some paintings and very faint pecked-marked carvings that records this place as a "Possum dreaming."

As Jimmy showed us these pecked-marked carvings, he made a sign-talk with his hand for the Possum, and it was interesting to see that the sign-talk and the engraving were similar, and near-by, as if to confirm this thing, was similar painted "abstract art" of the possum with the tracks of the animal beside the painting.

As an illustration, the pecked carvings were one circle with another one nearly around the inner one, and the sign-talk of the possum made by Jimmy was the middle

finger and thumb joined in a circle with the index finger curved as part of the outer circle. The inner circle, Jimmy explained, "was the belly and fat," apparently the animal was cooked, "and the outer part-circle was the tail."

As if to confirm this relationship of the abstract art to sign-talk, we went to "Kumalba" (Emu Spring) west of Central Mount Wedge, and at this "Woman dreaming," relating to the ramblings of the Buk-buk owl and his two wives, we saw more pecked-marked carvings, but these were only one circle for each design, and as Jimmy chanted the song of that "Woman dreaming" he rubbed his hand around the pecked circle on the stones and explained that these stones were the women of the Buk-buk man of the legend, hence the sign-talk for breasts on the stones which is always a circle on the chest with most tribes.

At one place we came upon a series of painted white lines joined together on top with a white line, and Jimmy informed us that these were the hanging tails of the possum as it sits on a limb.

From the above it appears that the crude paintings and carvings of the original Northern Arunta or Wailbri tribesmen followed along the lines of thought as in sign-language for these ritual centres. Sign-language, with its taboos, becomes all-important in camp behaviour, for it is general knowledge that people under this speech taboo can only whistle when they wish to attract attention; and so deeply rooted is this prohibition on speech that I have been with Aborigines who, having been under this ban for years, when released, could often be seen with hands and fingers going in sign-talk as they "thought" in sign-talk just as people who live lonely lives will talk to themselves or *think aloud* as they wander around. So, by easy stages, we have thinking, thinking aloud and thinking in

sign-language, then painting in the sign language which could be called the abstract art of the Aborigines.

W. E. HARNEY.

The Sir William Dixon Collection in the Australian Museum, Sydney.

Since 1912 Sir William Dixon has presented to the Australian Museum at various times collections of anthropological specimens which now total almost 1,500 specimens. They are from Australia, New Zealand, Pacific islands, Ceylon and India. They include a very choice collection of 900 specimens from all over Australia and from New Guinea and the Bismarck Archipelago collected by Harry Stockdale, and another series of almost 200 specimens collected by A. Bringa Robertson. These specimens filled many gaps in the Australian collection of the Museum. In December, 1951, Sir William Dixon presented just over 400 specimens from Australia, New Zealand and Polynesia. There are 205 Maori pieces in this collection, and they include 13 wood carvings comprising a *pui-pui* board, three large human figures, a face-mask, two model canoe-prows, and several boxes; 12 kotiate and patu wooden hand-clubs, one staff and 10 paddles, all beautifully carved; eight wooden weapons, including *tewha tewha*, *taiaha* and clubs. The magnificent series of Maori jade or greenstone objects consists of seven *mere*, 20 adzes and chisels, 41 *hei-tiki*, 55 ear-pendants, three *peka peka* and five spiral pendants, two bird-leg rings or *poria*, an image of Tangaroa, god of fishing, and several other pendants. There are in addition from New Zealand a bone flute, two bone combs and four cloak-toggles, and several basalt and bone *mere*. Many of these specimens are beautiful examples of their type and they form a most invaluable addition to our Maori collection. Among the other specimens presented are old Tongan clubs, one of

which is dated 1798; a beautifully carved paddle from the Cook Islands; a *kava* bowl with coconut cup from Fiji; and 18 adzes, including greenstone implements, from New Guinea and New Caledonia. Of special interest are 22 brass breast-plates issued to aboriginal "kings," "chiefs," overseers, and other important individuals in New South Wales. Another most interesting item is the manuscript, with illustrations, of the first six Bulletins of North Queensland Ethnography, by Dr. W. E. Roth, published in Brisbane. Sir William's kindly interest in the Museum has been maintained for forty years, and to him we are indebted for numerous valuable specimens, as a perusal of the above list will reveal.

The Anthropological Society of Victoria : Syllabus 1952.

- February 13th: "Archæology and Culture History"—the techniques used in revealing the history of man in the Middle East. J. A. Thompson, M.Sc., B.D., Australian Institute of Archæology.
- March 12th: Members' Night.
- April 9th: "Village Life in India"—the impact of modern technology on a peasant economy. Muni Lal, Indian Office of Information, Sydney.
- May 14th: "Black and White in Three Trust Territories"—Native government in the Belgian Congo, Tanganyika and New Guinea. E. W. P. Chinnery, ex-Government Anthropologist, New Guinea.
- June 11th: "The History of Chinese Culture." C. P. Fitzgerald, Reader in Far Eastern History, National University, Canberra.
- July 9th: "Sticks and Stones"—the place of material culture in Anthropology. Presidential Address. Donald J. Tugby, Ethnologist, National Museum, Melbourne.
- August 13th: Annual Meeting. "Photographing Aborigines"—an account of recent field work in the Northern Territory. R. C. Seeger, Hon. Secretary, Anthropological Society of Victoria.
- September 10th: "The History of Pacific Art Styles"—a discussion of recent theories. Dr. Leonard Adam, F.R.A.I., Department of History, University of Melbourne.
- October 10th: Members' Night.
- November 12th: Symposium, "Anthropology in the World To-day".
- Interstate visitors are welcomed to the meetings of the Anthropological Society of Victoria, which are held in the B.M.A. Hall, Albert Street, Melbourne, opposite St. Patrick's Cathedral. Contact with the Society may also be made through the Hon. Secretary or the Ethnologist, the National Museum, Melbourne.

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(Founded 1932)

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OBJECTS.

- (a) To promote the science of Anthropology.
- (b) To hold biennial conferences of delegates from affiliated societies to deal with matters affecting affiliated societies generally, or the science of anthropology.
- (c) To take public and official action in the interests of anthropology, as may be deemed desirable.
- (d) To encourage affiliated societies to co-operate in every possible way.

The Anthropological Society of N.S.W. as such is not responsible for any opinion or declaration published in this magazine, by whomsoever expressed, unless specifically stated to be so by the Editor.

All communications, MSS., and proposed advertisements to be addressed to Mr. F. L. S. Bell, M.A., Editor, City of Sydney Public Library, George Street, Sydney.

Persons interested in the work of the Society please address correspondence to the Hon. Secretary.